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COTTON ROOT.

BY PROFESSOR E. S. WAYNE.

Read before the Cincinnati College of Pharmacy.

The root of the cotton plant (*Gossypium herbaceum*) has for some time past been accredited with possessing the properties of an emmenagogue, parturient and abortive, and said to promote uterine contractions with as much efficiency and more safety than ergot.

As yet no analysis has been made of the root to determine its proximate principles, and to ascertain whether it contains any of the principles found in ergot, such as propylamin, or alkaloids such as ergotina and ecbolia, found in that substance by Wenzell.

The fluid extract of cotton root is a preparation largely used in the West, and highly spoken of as above by some practitioners. It is very prone to deposit a peculiar red precipitate a short time after it is made; and the frequent complaints made respecting this has induced me to make some investigations as to the cause and nature of the deposit, and, at the same time, of some of the proximate principles existing in the root, or, more properly speaking, of the bark of the root.

For this purpose one pound of the root bark, in suitable powder, was exhausted with alcohol of 76°; the resulting percolate was of a pale amber color. This was distilled to separate any resin present in it. After distilling off the alcohol, there was left in the still a dark red aqueous solution of extractive, &c., and a dark red resinous mass.

The resinous mass was removed and reduced to a coarse powder, and washed with water as long as anything was taken up by it, then

dried and reduced to a powder. It then resembled very much in appearance powdered cochineal.

The change that had taken place in the color of the original percolate by the action of heat during the distillation, was a matter of much surprise to me; the resulting aqueous solution and separated resin being so different in color to that of the original percolate, from a pale amber color to a dark red, resembling in appearance that of a solution of kino.

The red resin obtained from one pound *avoirdupois* of bark, weighed 210 grains.

Upon examination of the dark resinous mass, it was found to be insoluble in the following menstrua: alcohol, chloroform, ether, aqua ammonia, but soluble in solutions of caustic potassa and soda; the solution a dark purplish-red color, and precipitated unchanged on the neutralization of the alkali by acids.

A portion of the precipitate that deposited by standing in the fluid extract of cotton root was filtered off, washed and dried, and submitted to the action of the same solvents as the resin mentioned, and with like results.

The watery solution left in the still was, as mentioned, also of a dark red color, and gave the following precipitates with solutions of metallic salts. With mercuric chloride, red; with argentic nitrate, purplish-red; with plumbic acetate, purplish-red, and with ferric sulphate, purplish-black.

The remaining portion, after making the above tests, was precipitated with plumbic acetate, which precipitated the red coloring matter, and left it of a light yellow color; then treated with sulphhydric acid to remove excess of lead, and, after filtration to remove the sulphide of lead, was evaporated to dryness in a water-bath. The extract mass left was of a light yellow color, and exceedingly hygroscopic. A portion of it was dissolved in water, and tested for the presence of an alkaloid with solution of iodohydrargyrate of potassium, but gave no indications of the presence of any.

With Trommer's copper test it gave an abundant precipitate of cuprous oxide, indicating the presence of sugar.

A portion was also agitated with ether, and another with chloroform, and, after separation had taken place, the ethereal and chloroform solutions separated and left to spontaneous evaporation, no crystallizable proximate principles were separated. To a quantity of the

powdered bark was added a solution of caustic potassa; there was no development of propylamin, as with ergot.

From the above experiments, it would seem that cotton root bark contains no substances similar to those of ergot, upon which its therapeutic value rests, nor any other peculiar alkaloid or proximate principle except the red resinous mass spoken of, or a substance colorless as in the original percolate, and by oxidation changing to this red substance. This red matter seems to be a peculiar one—an acid resin, insoluble in alcohol, chloroform and ether, forming colored precipitates with metallic salts, and soluble in solutions of caustic potassa and soda.

The red color of the watery solution described is also due to this, and held in solution through the solvent action of organic matter present, often the case in such solutions, and sometimes with difficulty gotten rid of.

The substance that produces this red-colored acid resin, seems to exist in all parts of the plant—in the flowers and in the seeds—the purplish tint at the base of the petals is due to it, and in the seeds the dark red spots there found, and which gives to crude cotton seed oil its dark color, and which is removed in the process of refining the oil by the solvent action of caustic alkalies. From the solubility of this substance in alkalies, and forming well-marked and characteristic precipitates with metallic solutions, it has claims to be classed an acid, and would propose for it the name of gossypic acid.

Having satisfied myself as to the nature of the substance that composes the precipitate in the fluid extract of cotton root, and the identity of the precipitate with the resinous mass that was left in the still, as mentioned, I would say that it is impossible to prevent the same from forming in it, as it is caused by a chemical change taking place in a peculiar proximate principle in the plant, insoluble in the alcoholic menstruum.

Whether the addition of glycerin or sugar would prevent this, I have not determined, and will report experiment at some future time.

Query: Is this acid or the substance from which it is produced the active principle of cotton root?

The cotton seed cake (the mass left after pressing out the oil) contains more or less of it, and I am informed by Dr. John A. Warder, that cows fed upon it will abort, otherwise it is a nutritious food for cattle. Some of the substance I have placed in the hands of practitioners for practical test, but as yet have had no report concerning it.

Cincinnati, May, 1872.

ON SOME PECTORAL POWDERS OF EUROPEAN PHARMACY.

BY THE EDITOR.

At the request of two correspondents we publish the following formulas of preparations, which are more or less used on the continent of Europe, and occasionally prescribed in this country. The two first formulas yield a mild aperient preparation.

Pulvis glycyrrhizæ (s. liquiritiae) compositus; *Pulvis pectoralis Kurrella* is prepared, by the German pharmacopœias, by mixing intimately the powders of senna and liquorice root, each 2 parts; fennel and flowers of sulphur, each 1 part; sugar 6 parts.*

The formula of the Greek pharmacopœia differs somewhat, as follows: liquorice root and senna, each 6 parts; sugar 3 parts; anise 2 and sulphur 4 parts.

The Belgian pharmacopœia orders: marshmallow root, 36 parts; orris root, liquorice root, tragacanth and sugar, of each, 16 parts.

Pulvis pectoralis antispasticus.—The Danish pharmacopœia uses ipecac and opium, of each, 1 part; starch, 40, sugar, 80 parts. This preparation is twelve times weaker than Dover's powder.

Pulvis pectoralis resolvens.—The same pharmacopœia mixes equal weights of flowers of sulphur, orris root and Indian turnip (*Arum maculatum*).

Pulvis pectoralis Trossii; Saccharolatum lichenis Islandici.—The old Hamburg pharmacopœia prepares it as follows: 2 parts of Iceland moss are twice boiled with 32 parts of water until 16 parts are left; the liquids are expressed, strained, mixed and evaporated to 10 parts; when somewhat cooled, 8 parts of strong alcohol are added, the precipitated jelly is collected, washed and mixed with 1 part of sugar, when it is carefully evaporated to dryness, and powdered.

The Sleswick-Holstein pharmacopœia removes the bitter principle by an alkali, and manipulates as follows: 1½ oz. Iceland moss are macerated with hot water containing one drachm carbonate of potassa; after 24 hours the liquid is expressed, the residue washed with cold water, and then boiled with 24 oz. water until 6 oz. remain behind, in which 4 oz. sugar are dissolved by boiling. The solution, on cooling, forms a good jelly, which constitutes *gelatina lichenis islandici edulcorata*. Six parts of this, 4 parts sugar and one part gum arabic are mixed, dried and rubbed to a uniform powder.

* The formula published on page 336 of the Philadelphia Medical Times, requiring but 3 parts of sugar, is that of the sixth Prussian Pharmacopœia of 1846, and not in use in Germany since 1862.

Pulvis pectoralis Wedelii.—Hager, in his *Manuale pharmaceuticum*, gives the following formula: liquorice root, 8 p.; orris root, 2 p.; sulphur, 4 p.; benzoin, 1½ p.; sugar, 16 p.; oil of fennel and of anise, each $\frac{1}{2}$ parts.

The proportions of the Danish *pharmacopœia* are: liquorice and orris root, each 6 p.; sulphur, 4 p.; benzoic acid, 1 p.; sugar, 16 p.; oil of fennel and of anise, each $\frac{1}{2}$ part.

The formula of the *Würtemberg pharmacopœia* of 1798 was as follows: *Arum maculatum* (Indian turnip), orris root, diaphoretic antimony, flowers of sulphur, native cinnabar and crab's eyes, equal parts.

ON LOBELINA.

By W. D. RICHARDSON, JR.

From the author's Inaugural Address.

Lobelina has a light yellowish color and somewhat aromatic odor. It is lighter than water, and when dropped into that fluid rises to its surface, spreads out like a drop of oil, and gradually dissolves, forming a transparent solution. It has an extremely acrid taste, turns turmeric paper brown, and restores the blue color to litmus reddened by an acid. It neutralizes the acids, forming with most of them crystallizable salts. The acetate of lobelina does not crystallize, and is the most soluble of the salts; hence the superiority of acetic over the other acids in the process for obtaining the alkaloid.

The salts are very soluble in water, less in alcohol, and sparingly soluble in ether; whereas lobelina is most soluble in ether, and least in water. In its natural state it is combined with lobelic acid, for which it has a rather weak affinity.

One of the most interesting properties of this alkaloid is its decomposition, either in the free state or as it exists in the herb, by heat; that of boiling water being sufficient to deprive it of its characteristic acrid taste; but, on being combined with a strong acid, it may be subjected to heat without injury.

The separation of lobelina from its aqueous solution, by means of ether, is not complete, both on account of the gelatinous consistence imparted to the lower position of the ether, and its affinity for the coloring matter, which is more soluble in water than in ether, as demonstrated by the following experiment of preparing lobelina by Prof. Procter's process.

Four troy-ounces of finely-powdered seed were exhausted with alcohol acidulated with acetic acid, evaporated to a syrupy consistence, triturated with magnesia, and four fluid-ounces of water gradually added ; and after frequent agitation for several hours, the liquid was filtered, and the filter washed with a small quantity of water. This solution was then agitated frequently with ether, during four or five hours, and the ethereal solution decanted.

The residue was treated in the same manner, with two successive portions of ether, and the ethereal solutions, mixed and evaporated spontaneously, yielded lobelina. The aqueous solution was found still to have an alkaline reaction and acrid taste.

It was treated with iodohydrargyrate of potassium, which produced a yellowish-brown precipitate. This was washed with water slightly acidulated, dissolved in alcohol, and decomposed by sulphuretted hydrogen, which precipitated the mercury, and left the hydriodate of lobelina in solution.

The whole was transferred to a filter, and washed with alcohol. The filtrate had a beautiful reddish-brown color, and was tested with mucilage of starch for free iodine with no effect, then evaporated to dryness ; the residue, treated with a small quantity of water and filtered, had a light yellowish color. To this solution was added nitrate of silver, which produced a yellowish white precipitate, the nitrate of lobelina remaining in solution. The solution filtered and evaporated spontaneously, yielded yellowish, transparent, granular crystals, having no odor, but possessing the characteristic acrid taste of the base. The nitrate of lobelina, by exposure, deliquesced, and assumed a somewhat darker color.

2. A portion of lobelina in a watch crystal was exposed four days. It changed to a resinous consistence and darker color. In this state it is scarcely soluble in water, but readily dissolved by alcohol and ether. Cold nitric and sulphuric acids had no effect.

3. Another portion of lobelina, which had been exposed four days, was dissolved in water, and a few drops of muriatic acid added to the solution. This produced a white precipitate, which, by heat, changed to a brown color.

4. An aqueous solution, exposed for a longer time, slowly deposited a white sediment, which, after the decanting of the water, resumed its brown color.

5. A portion of the exposed lobelina was boiled with diluted sul-

phuric acid, and Trommer's test applied without giving any evidence of glucose.

6. Two troy-ounces of the seed were treated according to the process for obtaining colchicia, but without a satisfactory result.

From the above experiments, it appears that lobelina, by exposure, undergoes some change, by which it is rendered incapable of uniting with acids to form salts.

ON AN ASSERTED SPECIFIC FOR AGUE.

BY JOHN M. MAISCH.

When I wrote the short notice on *Artemisia Ludoviciana*, Nuttall, in my "Pharmacognostical Notes," in the May number of this journal, I did not expect that I should meet again, in so short a time and under a different garb, with a plant which appears to possess the properties of the aromatic bitters merely in a very moderate degree. In the same month in which the above-mentioned paper was first published, I received from East Saginaw, Michigan, a letter from Mr. F. C. Weber, enclosing portions of the flowering tops of this plant, which had been offered to him as a specific for ague. Guided by the information received from Mr. Weber, I applied to Mr. Ottmar Eberbach, at Ann Arbor, Mich., who kindly furnished me with an original package, the dimensions of which are 2 by $2\frac{1}{2}$ by 4 inches, and which weighs $3\frac{1}{2}$ ounces. The material consists of the leaves and the flowering tops, with but small portions of the stems of the plant named above, the whole cut up and much broken, but the botanical characters, particularly of the flower-heads, readily discernible. It is done up in an angular package, of the dimensions stated, and packed first in thin white printing paper, which is enclosed in a wrapper of yellow paper, with the following printed on the outside:

CHINESE AGUE CURE.

CHINESE AGUE CURE.

Quinine no go.

[Wood-cut of
a Chinaman,
holding a
plant in his
right hand.]

Quinine no go.

CHINESE AGUE CURE.

DIRECTIONS.—Steep a tablespoon once and a half full of the herb in one quart

of water; drink at any time during the day, when the stomach will bear it, and freely at night before retiring.

This herb will not only neutralize and drive out the Ague poison, but will thoroughly

CLEANSE THE SYSTEM

and purify the blood, by continuing its use moderately for a few days.

This herb has been analyzed and by the medical faculty of the University of Michigan, at Ann Arbor. It is gathered by the Chinamen in the West, and is put up by G. ENGLE & BRO., *Ann Arbor, Michigan.*

It is curious, though, under the circumstances, not surprising, that this "wonderful" medicine was entirely unknown at Ann Arbor, except to the proprietors; and it is but just to state that the name of the University of Michigan has been unwarrantably connected with it. From the information received, it appears that Prof. Rose was, last winter, requested by Mr. Engle, a law student of the University, to analyse a handful of the herb, which was then stated to have been collected near Salt Lake, Utah. The analysis, however, was not made by the Professor. The blank space left above near the lower end of the wrapper, is in the original blurred over with blue paint or printers' ink, which leaves the word "and" plainly visible, but renders the following word (to judge from the space, probably "recommended") quite indistinct.

The circular announcing the virtues of this new claimant for public favor and for the money of those who like to be duped, bears, likewise, the effigy of the Chinaman. Its contents deserve to be preserved for future reference and edification, and we therefore give it, *verbatim et literatim*:

CHINESE HERB.

Burning fever and AGUE CHILLS,—Need not be endured; nor those QUININE PILLS: For, soon as the Chinese Herb is given,—The FEVER will cease,—The Ague be driven.

If you, my friend, would keep your wealth?
And, what is more,—your solid health?
Keep the QUACK DOCTORS from the door!
And use the "CHINESE AGUE CURE."

NO MORE QUININE. This Herb is cured and put up in its natural state; and thus should be used. It will DRIVE all fever and ague, and cure many diseases by purifying the blood.

We must admit,—the "HEATHEN CHINEE" is ahead of us in curing the sick.—The Chinese Herb should be within the reach of every family: for the price will admit.

DRUGGISTS? Supply your customers. We will allow a large commission. A trial package will convince you of its merit. DOCTORS can use it in practice to their advantage.—PRICE, 75 CENTS.

ON THE BOTANICAL ORIGIN OF THE COMMERCIAL ROOT OF
CYPRIPEDIUM.

BY JOHN M. MAISCH.

In the May number of this journal (page 194) I stated that two different rhizomes are met with in commerce under the common name of ladies' slipper, but that I was unable to make out their origin for want of specimens of the different species of *Cypripedium*. Since the publication of my paper I have been enabled to verify my former supposition that *C. pubescens* and *parviflorum* contribute their roots to the commercial article. My thanks are due to Mr. James T. King, who sent me living specimens of the former species from Middletown, N. Y., where it grows, though not abundantly; also to Messrs. Ferdinand Reppert, of Ann Arbor, Michigan, and Henry MacLagan, of Lindsay, Ontario, from whom I received *C. parviflorum*. Mr. Reppert collected his specimens in a tamarack swamp, about three miles south of Ann Arbor, where also *C. spectabile* is occasionally found, but not *C. pubescens*. Other species than *C. parviflorum* and *spectabile* appear to be likewise of rarer occurrence near Lindsay.

The most characteristic difference in the growth of the two rhizomes is that the one belonging to *C. pubescens* is almost horizontal, and even in its greatest length, observed by me, measuring nearly 4 inches, but slightly bent, with one shallow downward curve; its thickness is usually about $\frac{1}{8}$ to $\frac{3}{16}$ inch, with deeply concave scars of the over-ground stems, having fully the diameter of the rhizome. Some rhizomes have short branches, swelled considerably at the places where the flowering-stems had been developed, leaving scars frequently fully half an inch in diameter. The more recent scars have a rather long fibrous tuft of the dead ligneous tissue, which gradually disappears in the older ones. The scars are rather crowded, being distant from each other less than the length of their own diameter. The numerous rootlets reach a length of nine inches, with about $\frac{1}{2}$ inch in diameter, are entirely free from branches, and, though attached to all sides of the rhizome—owing to the position of the latter in the ground,—are rather abruptly bent downwards, leaving the upper side of the rhizome almost bare. They are considerably undulated, and have a yellowish-brown color, externally, which becomes much darker on drying, when the rootlets shrivel much, showing longitudinal wrinkles. The cortical portion of the rootlets is colored blue by iodine, the ligneous cord, about $\frac{1}{8}$ the diameter, becoming yellowish, while the cortical por-

tion of the rhizome becomes darker, but not blue, the ligneous centre behaving like that of the rootlets.

The rhizome of *C. parviflorum*, of which I received a larger number of living specimens, grows in an entirely different manner. It is bent up and down in a direction differing but little from right angles, the sides of which are about $\frac{1}{4}$ inch in length. None of the specimens received had more than four such bends or three angles, so that the length of the rhizome, actually about three inches, is in a straight line about two inches. The diameter of the rhizome is about $\frac{1}{2}$ inch, the stem scars fully the same, somewhat alternating in their position, and about three in number on each bend. Short, thick side branches were not observed. The rootlets are likewise attached to all sides of the rhizome, the upper surface of which is always more or less covered with them, a natural result of its position in the soil. They are about 4 to 6 inches in length, of about the same diameter, but less wavy than those of *C. pubescens*, from which they differ likewise in their brighter color, which is a decided orange-brown when fresh, and remains brighter after drying. In the relative thickness of the cortical and ligneous portion of the rhizome and rootlets, as also in the amount of starch contained therein, as far as may be judged from the color imparted by iodine, the two species closely resemble each other. This resemblance is also found in the peculiar musty odor, and the mucilaginous, disagreeable, scarcely bitterish, somewhat acrid taste.

The roots of these two species of *Cypripedium*, I am now satisfied are the only ones which I have observed in the commercial article, in which the appearance, particularly of the rootlets, will vary somewhat. When pressed in packages, owing to the moist condition, the rootlets will be apparently much thicker than after curing the drug without pressure, and the shape of the rhizome is apt to lose its characteristic form; the color of the rootlets and the presence or absence of the thicker lateral rhizome branches may then aid in determining the origin, while there will scarcely be any difficulty in this, if the rhizomes have been dried without pressure.

P. S. After the above was in type, I received from Mr. H. MacLagan several splendid specimens of *C. pubescens*, with numerous short side branches, and with rootlets measuring 18 to 21 inches in length. My thanks are likewise due to M. Alfred Daggett of New Haven, Conn., for some fine specimens of *C. acaule*.

VALUABLE PRODUCTS OBTAINED FROM *MACLURA AURANTIACA*, NUTTALL.

BONHAM, TEXAS, May 27th, 1872.

The writer respectfully suggests that the article noticed by Prof. J. M. Merrick (published in *Amer. Jour. Pharm.*, Feb., 1872, p. 82) is probably an extract from the wood of the Bois d'Arc (*Maclura aurantiaca*, Nuttall), a native tree of Northern Texas, and largely used in the Northwestern States for hedges, under the name of *Osage orange*. A decoction of the wood, obtained by boiling the chips in water, has been used here many years for coloring yellow. A solid extract, obtained in the manner used for extract of logwood, gives a beautiful yellow extract, which might very properly be called *Aurantine*. This suggestion is made for the benefit of the curious in such matters, and might well repay the experiment of the scientific. The material is abundant in this section of Texas.

In addition to the coloring matter obtained from the Bois d'Arc, it also yields a large percentage of tannin. Experiments have been made here with it in tanning leather, which indicate its great superiority over the oak barks or sumach, and requiring much less time.

The seeds from the fruit yield an abundant, bland and limpid oil, burning with a steady, clear flame in an ordinary lard oil lamp. In taste it resembles very much that of olive oil, and maintains its fluidity at a low temperature. The specimen we have was obtained by expression in the ordinary manner, and we are of the opinion that it will yield equal to the castor bean.

"TEXAN."

GLEANINGS FROM THE EUROPEAN JOURNALS.

BY THE EDITOR.

Preparation of pure muriatic acid.—Th. Diez dilutes the crude acid until it has a specific gravity of 1.13, and passes sulphuretted hydrogen through it, whereby arsenic, chlorine and sulphurous acid are removed, and the ferric chloride is converted into ferrous chloride. Next morning the precipitate is collected upon a double filter, and the acid distilled from a glass retort into a glass receiver, which fits well, but is not luted. Heat is applied, and when the distilling liquid ceases to contain sulphuretted hydrogen, the receiver is changed and the pure acid collected. Towards the close of the operation the receiver is again changed, as the distillate is now apt to contain again

traces of ferric chloride, in which case it is reserved for a subsequent purification.*—*N. Jahrb. f. Pharm.*, 1872, April, 203.

The external application of chloral hydrate to syphilitic ulcers has been successfully tried in 69 cases by F. Acetella. After a few applications healthy granulations were formed and the ulcer changed into a simple wound. Several of the cases were of long standing, and had resisted various treatments for 12 and even 15 months. *Ibid.*, 231, from *Allg. Med. Centr. Ztg.*

Dry narcotic extracts, when prepared with dextrin, cannot be dissolved in alcoholic liquids, owing to the insolubility of dextrin in the latter. W. Stromeyer prepares these extracts now with sugar, and finds that they remain perfectly dry. It is necessary, however, to exsiccate the mixture at a temperature not exceeding 80° C., since a higher temperature causes them to remain soft. Thus prepared they dissolved readily in the usual solvents by simple agitation.—*Archiv d. Pharm.*, 1872, March, 225.

Action of sunlight upon olive oil.—Luigi Moschini found that olive oil, bleached by exposure to sunlight, does not alter its specific gravity; if now treated with sulphuric acid (sp. gr. 1.63) it is colored red-yellow, not greenish; by nitric acid or caustic soda it acquires a whitish instead of a green or light yellow color. Exposed to the sunlight in open vessels for one month, the oil continues to congeal under the influence of nitrous acid; but after two or three months the oil remains liquid, even if treated with a solution of nitrate of mercury saturated with nitrous acid. The bleached oil has a strongly acid reaction, a somewhat rancid odor and taste, and dissolves aniline red easily, acquiring a deep color.

It follows from this that the usual tests for the oils—nitric acid, sulphuric acid, caustic soda and aniline red—are apt to mislead if pure olive oil has been exposed for some time to the sunlight and become rancid. Normal olive oil contains a yellow principle, which is colored green by acids, and which is decomposed by the sunlight so that neither the acids nor caustic soda produce the characteristic reactions; at the same time free acids are formed, and the olein gains one of the characteristic properties of elaidin.—*Chem. Centr. Bl.*, 1872, N. 17, from *Landw. Vers. Stat.*, xv, 1.

* See also page 164 of April number Amer. Journ. Pharm., 1872.

Antimonic blue.—This new beautiful pigment which, however, cannot be used upon lime, is easily prepared by dissolving metallic antimony in aqua regia, filtering through granulated glass and adding a dilute solution of ferrocyanide of potassium as long as a precipitate is produced. It resembles ultramarine, and yields, with chrome yellow or chromate of zinc, a green color, scarcely less bright than Paris green, but much less poisonous. It may be used with oil, varnish, gum, glue and starch.—*Ibid., from Polyt. Notizbl. xxvii, 112.*

Arseniate of antimony.—The grannles antimoniaux de Papillaud contain, according to H. Blaser, each 0.0005 grm. of this compound, which appears to be also used in Russia in doses of 0.0012 grm. four times daily. Hager prepares it by first obtaining oxide of antimony from the chloride by precipitating with dilute solution of carbonate of soda, washing with a warm solution of the same salt, then with distilled water, and drying. Ten grm. of the oxide are dissolved, with moderate boiling, in four times the quantity of muriatic acid of 25 per cent. After cooling, small fragments of carbonate of soda are added until a faint turbidity becomes permanent. 12 grm. of anhydrous neutral arseniate of soda are dissolved in 120 grm. of distilled water, into which solution the antimony solution is gradually dropped with continued stirring. The liquid is then diluted with more distilled water and the precipitate washed by decantation and upon the filter, until the filtrate ceases to occasion a turbidity with nitrate of silver. It is then dried at a temperature of about 50° to 60° C., and then constitutes a snow-white, not very heavy powder. Its composition is SbO_3 , AsO_5 , and it contains 56 per cent. oxide of antimony and 44 per cent. arsenic acid. If the solution of the chloride is added too rapidly, or if the precipitate is washed with hot water, the preparation contains an excess of antimony.—*Pharm. Centr. Halle, 1872, N. 20.*

Chloride of mercuric ethyl was first prepared by Strecker and Franklin from the iodide. A very simple method, according to Prümers, is to add an alcoholic solution of corrosive sublimate to mercuric ethyl; the crystalline precipitate is washed upon a filter with warm water and dried over sulphuric acid. The reaction is as follows: $Hg(C_4H_5)_2 + HgCl_2 = 2 Hg(C_4H_5)Cl$. It occurs in white glistening scales, is little soluble in water, ether and cold alcohol, but dissolves freely in hot alcohol. At 40° C. it sublimes without fusing previously; its odor is peculiar, not disagreeable. Stannous chloride, potassium io-

dide and mineral acids are without action upon it, and albumen is not precipitated. It has been successfully used in Berlin in cases of syphilis in the form of pills (0.5 to 1.0 in 100 pills) and subcutaneously (0.5 to 10 grm. in 100 water).—*Ibid.*, N. 22.

Cod liver oil is flavored, by Duquesnel, with 1 per cent. of oil of eucalyptus, which covers the odor and taste so completely that only that of the latter is perceived, and even the unpleasant eructations are entirely modified.—*Journ. de Pharm. et de Chim.*, May, 1872.

ON QUINAMINA, A NEW CINCHONA ALKALOID.

BY O. HESSE.

Cinchona succirubra, cultivated in British India, is now so far developed that considerable quantities can be exported, and its value, which, according to Howard, is not inconsiderable, may be established. I have found this bark to contain relatively much quinidia (cinchonidia?) some quinia, and in variable proportions other alkaloids, among them a new one, which I propose to call quinamina (chinamin.)

Quinamina crystallizes in very fine long, asbestos-like, white prisms, which contain no water of crystallization. It dissolves at ordinary temperature rather easily in ether, more readily on boiling, and crystallizes on cooling and evaporation. Alcohol and petroleum ether dissolve it readily, particularly when heated, and separate it likewise in the crystalline form. It is little soluble in diluted alcohol and insoluble in water, caustic potassa and ammonia; alkalies separate it from the solutions of its salts as a milky turbidity and finally in fine needles.

Its alcoholic solution has an alkaline reaction; it neutralizes sulphuric and muriatic acid, forming salts which are very freely soluble in water. The muriate is amorphous; the sulphate crystallizes with difficulty in hexagonal scales and short prisms.

The platinum salt is a yellow amorphous precipitate, readily soluble in water, and therefore obtainable only from the concentrated solution of the muriate. Its behavior to chloride of gold is likewise very characteristic; the solution of the muriate produces with it a yellowish white precipitate, soon acquiring a purple color and separating gold, while the supernatant liquid assumes a purplish red, afterwards a brownish color. Ferric chloride shows no characteristic reaction.

Dilute acid solutions of quinamina have not the slightest fluorescence. With regard to its solubility in ether, it might be placed be-

tween quinia and conchinin (quinidia); but it does not, like these alkaloids, produce a green color with chlorine and ammonia. The addition of chlorine causes the solution to turn yellowish, and on supersaturation with ammonia, a yellowish amorphous precipitate occurs.

Concentrated sulphuric acid dissolves the new alkaloid colorless; on heating the solution turns yellowish and brown. Concentrated nitric acid produces a yellow solution, which becomes orange-red and finally colorless. The alkaloid fuses at 172° C., congealing on cooling, radiatedly crystalline, if the application of heat has lasted only a short time, when longer applied it turns brown and amorphous. The pure alkaloid has scarcely a bitter taste, unless combined with acids, when it is pretty bitter.

The amount of quinamina left on hand would be sufficient to determine its elementary composition, which, however, has been deferred until more can be prepared.

Compared with other alkaloids of the cinchonas, it resembles paytina in its behavior to chloride of gold; but the other properties of this alkaloid do not admit of its being confounded with quinamina.—*Berichte d. d. chem. Ges. zu Berlin*, 1872, N. 6.

ON WILD CHERRY BARK.

BY JOSEPH L. LEMBERGER.

QUERY 43.—The cold infusion of wild cherry bark sometimes varies considerably in color. Is this due to the time at which the bark is collected, or to what other cause?

In investigating this subject, several ideas have suggested themselves:

1st. The probability that the season or month in which the bark is gathered may control the peculiarity we meet with.

2d. If such is the case, it must be due to some principle existing to a greater or less extent according to the time of gathering.

In order to do justice to the query, it became necessary to have the different seasons of the year represented in the bark to be examined, having no data at all upon the subject, although having frequently been examined, however, by some of our ablest pharmacists, with other objects in view. I therefore had carefully collected for me portions of the bark during every month of the year, bark of the root as well as of the tree or branches, and, after making an infusion, find a great diversity in the shades of color.

I have arranged them into three classes, *light*, *medium*, and *dark*, as follows:

Infusion of the Bark of the Tree of Wild Cherry.

	Light.	Medium.	Dark.
1st month.....	January.	.....	.....
2d " "	February.
3d " "	March.
4th " "	April.
5th " "	May.
6th " "	June.
7th " "	July.
8th " "	August.
9th " "	September.
10th " "	October.
11th " "	November.
12th " "	December.

The bark gathered in April, October and November form the darkest preparations, that of the months of January and August the lightest, whilst the bark of the remaining months form various shades of medium dark, that of the month of September seeming to be the darkest. The result of experiments with the bark of the root vary considerably from those with the bark of the tree, and as the color of the infusion is decidedly light or dark, I have arranged but two classes, the light being a pale straw color and the dark about the color of the darkest of the medium list of the bark of the tree.

Infusion of the Bark of the Root of Wild Cherry.

	Light.	Dark.
1st month.....	January.	.....
2d " "	February.	.....
3d " "	March.	.....
4th " "	.....	.....
5th " "	.....	.....
6th " "	.....	.....
7th " "	.....	.....
8th " "	.....	.....
9th " "	.....	.....
10th " "	.....	.....
11th " "	.....	.....
12th " "	November.	.....
	December.	.....

The darkest seeming to be the months of May and October.

After precipitating the tannin out of the several infusions, and finding this principle to exist in the ratio of color, I have come to the conclusion, and give as the answer to the 43d Query, that the cause of the variance in the color of cold infusion of wild cherry bark is due to the existence of tannin in greater or less quantity, in proportion as the infusion is dark or light, and suggest that this difficulty or peculiarity can be avoided by due attention to the collection of the bark.

—*Proceedings Amer. Pharm. Assoc.*, 1871.

THE CALABAR BEAN.*

BY DR. L. VINCENT.

In a sojourn of nearly two years at the Gaboon, during which time he had opportunities of studying the numerous substances possessing medical properties produced in that part of equatorial Africa, Dr. Vincent's attention was particularly directed to the Calabar bean. It is used in that country, together with several other toxic agents, such as the *Icaza m'boundu*, the *Inee*, the *Alchiuse*, etc., by the tribes still plunged in barbarism and fetishism, for the compounding of their ordeal drinks. From a memoir giving the result of his inquiries we are enabled to glean the following particulars:

The first specimens of this drug were sent to Europe by English missionaries from Old Calabar, where the natives called it "éseré." About ten years afterwards its botanical position was assigned by Professor Balfour, and at nearly the same time Dr. Fraser, of Edinburgh, while studying its physiological properties, discovered the remarkable property it possesses of contracting the pupil of the eye. In 1866 it was found in the French possessions in the Gaboon, not far from the banks of the rivers Como and Rhamboë. It is also found in abundance on the banks of the Ogo-wai; and as the physostigma prefers marshy and humid soils, it is probable that it occurs on the borders of all the rivers flowing into the Atlantic, from Old Calabar on the north to Cape Lopez on the south.

The Calabar bean is the seed of the *Physostigma venenosum*, Balf., which has been placed by Balfour in the *Leguminosæ*, sub-tribe *Euphaseolæ*, the only tribe of the *Leguminosæ* that contains poisonous plants.

It is a perennial woody climber, attaining sometimes a height of from forty to fifty feet. It twines from right to left round the neighboring trees, and in spite of any obstacles that may temporarily prevent its progress in this direction, it will after a time resume its course. The leaves are alternate, trifoliate, the middle leaflet ovate, very acute at the tip, regular at the base, stipulate, the lateral leaflets unsymmetrical. There are also two short stipules at the base of the general petiole. The flowers are disposed in clusters, and rose-colored, with magnificent purple veins. The calyx is unequally five-toothed; the corolla papilionaceous with vexillary aestivation; stamens

* Journ. Pharm. et de Chimie [4], vol. xv, p. 109.

ten, perigynous and disposed in two fascicles, one consisting of nine stamens and the other of one vexillary stamen; anthers bilobed, introrse, and dehiscing by two longitudinal slits. The ovary is stipitate and surmounted by a very long style, bearing a globular stigma, the surface of which is slightly hairy and covered with conical papillæ. Immediately below the stigma, on the convex part of the style, is a prominence having the shape of a falcate crest, which Professor Balfour appears to have looked upon as empty and vesicular, and therefore named the genus "*Physostigma*." The author, however, asserts that this prominence is full, and cannot be said in any way to justify the designation. The fruit is a pod $4\frac{1}{2}$ inches to 6 inches long, attenuated at both ends, a little compressed at the sides, bluish in color; the valves are thickish, striated and rugose on their external surface, and smooth on their internal face, which presents in the intervals between the seeds a sort of whitish cellular tissue. Each pod contains two or three seeds, most commonly two. The seeds, which are the active part of the plant, for neither the leaves nor the stems are poisonous, are oblong, convex, and slightly reniform, a character which is more marked in the beans proceeding from Ogo-wai than in those collected in the neighborhood of the Como and Rhamboë. They are from one to one and a quarter inch long and about two-thirds of an inch broad. The hilum, which surrounds nearly half the circumference of the bean, has the appearance of a long cicatrice, bounded by a slightly projecting line; is reddish and divided into two equal parts by a furrow that runs its entire length. The external tegument is testaceous, rather rough, and of a chocolate brown color. In the interior is found a large fleshy embryo, with conical radicle acum-bent to the cotyledons, which are ellipsoidal, hard, white, plano-convex, perfectly joined to each other at first, afterwards retracting, and leaving between them an empty space that constitutes a kind of central cavity.

Chemical analysis and microscopical examination have shown that the nucleus is formed of loose cellular tissue, containing large granules of amylaceous matter. These starch grains are oval or reniform, or sometimes assume the form of parallelograms with rounded angles; the margin is sometimes toothed. The spermoderm contains several coloring matters, which have recently been studied by M. Grassi, who thinks they might be utilized in the dyeing of silk. The active principle of the bean is the alkaloid discovered in 1864 by Jobert and

Hesse, which has been variously designated physostigmine, calabarine, and eserine, from the name *éséré* given to the plant by the Cameroons. It is amorphous, brownish-yellow, nearly insoluble in cold water, rather soluble in ammonia, carbonate of soda, ether, benzine, and alcohol. Its solutions in acids are generally deep red, but sometimes intensely blue.

The plant is also called by the Gaboonese *n'Chogo*, and by the Fans, *d'Rounda*. By the last-mentioned people the bruised seeds are made up into an ointment with palm oil, or some other excipient, and used to rid their bodies from the parasites with which they are covered.—*Pharm. Journ., Lond.*, May 11, 1872.

THE SO-CALLED AFRICAN SAFFRON.

BY JOHN R. JACKSON, A.L.S. (Curator of the Museums, Kew).

From the description of the so-called African Saffron by Prof. Maisch,* there seems no doubt but that the flowers are those of *Lyperia crocea*, Eckl., a serophulariaceous plant of South Africa, small quantities of which have been imported into this country from time to time, chiefly for use as a dye. The following description of the plant and its uses is given by Dr. Pappe in his “*Floræ Capensis Medicæ Prodromus*”:

“A little branched shrub. Leaves very small, wedge-shaped, fasciculate, obtuse, entire, smooth. Peduncles elongated, axillary. Flowers sub-racemose, yellow. Tube of the corolla much longer than the calyx. This bush deserves notice as a drug; and in all probability will, before long, become an article of colonial export. It grows abundantly in some parts of the Eastern districts, whence it has found its way into the dispensary. The flowers, which are called *Gesle bloemetjes*, closely resemble saffron in smell and taste; they possess similar medical properties, and as an antispasmodic, anodyne and stimulant, ought to rank with the *Crocus sativus*. Here, they have as yet been only used with success in the convulsions of children, but they deserve a more general trial. On account of the fine orange color which they impart, they are in daily request among the Mohammedans, who use them for the purpose of dyeing their handkerchiefs. This drug has been observed to be sometimes adulterated by the admixture of other plants of the same genus which are less efficacious.”

* See Amer. Journal of Pharmacy, 1872, page 110.

About thirty species are recorded of the genus, all natives of the Cape Colony, and the flowers are mostly yellow or purple, always turning black in drying.—*Pharm. Journ., Lond.*, May 11, 1872.

AMERICAN HELENICÆ (SNEEZE WEEDS.)

By J. M. BIGELOW, M. D.

Read before the Detroit Academy of Medicine, Feb. 27, 1872.

1. *Helenium autumnale*, Linn.—Grows all over the United States, from Maine to Florida, Texas, New Mexico, California and Oregon. In part 3 of the United States Dispensatory, Wood and Bache speak of it as being a good sternutatory. Rafinesque, in his Medical Flora, giving an account of the plant, says it is tonic, febrifuge and errhine, and, on the authority of Clayton and Schoepf, says it has been used in intermittents. Prof. Diesbach, of Heidelberg, ranks it among the febrifuges. It is known and employed all over the country as a valuable errhine. The whole plant, reduced to a powder, acts as such, but the flowers, especially the central florets, are more powerful. Dr. Benj. Barton, of Philadelphia, has highly extolled it as a substitute for the more acrid errhines, either alone or united with other ingredients. It may be used in diseases of the head, deafness, amaurosis, headache, hemicrania, rheumatism and congestion of the head and jaws. The shocks of sneezing are often useful in these cases when other remedies hardly avail. Cattle never eat it.

2. *Helenium parviflorum*, Nutt.—Found in Georgia and probably in other Southern States. It is a very distinct and well marked species, but scarcely bitter to the taste.

3. *Helenium tenuifolium*, Nutt.—Fields and roadsides of Mississippi, Louisiana and Arkansas, where it is a common and troublesome weed. According to Dr. Hale, it imparts a bitter taste to the milk of cows that feed upon it. The plant is also found in Texas, New Mexico and Sonora. It is the plant referred to by Drs. Galloway and Lewis, of Kosciusko, Miss. That it possesses powerful poisonous properties will appear from their statements, which we take the liberty of adopting in their own words. Dr. Galloway says:

“The first effect that is observable after a horse or mule has swallowed a bit of the weed, is a twitching of the eyes and a dodging of the head, as if to avoid some imaginary blow. I suppose this to be caused by flashes of light or some similar disturbance of the vision.

This is followed by twitchings of the muscles in other parts of the body, which increase in frequency and severity until they pass into general convulsions of such violence as to throw the animal upon the ground. The spasms recur at intervals of a few minutes, and in most cases terminate in the death of the animal, unless timely remedies are employed. The convulsions are of an atonic character, and on their cessation the animal breaks out in a very profuse perspiration. In the intervals between the spasms, the animal will eat greedily. The remedy consists in the prompt administration of lard or oil in some form. The first effects are observed within fifteen or twenty minutes after the weed has been swallowed. The active properties seem to reside chiefly in the top or bloom of the plant. I have seen sheep eat with seeming impunity the young plant. On the other hand, cattle are not unfrequently poisoned in the late fall or winter by eating the dried weed, after it has been killed by the frost. It is very rarely that stock raised here will bite it, even when hitched within its reach, unless very hungry and restless. Horses raised in Tennessee, Kentucky or Texas are often poisoned by it. A few years ago a gentleman passed through this place with a drove of ponies, about twenty-five in number, from Texas. He arrived about noon, and remained until four o'clock P.M., when he started forward for a watering-place five miles distant. The animals, meanwhile, in feeding in the open lots and grounds around the town, had picked up so much of the sneeze weed that eleven of them died before reaching the watering-place.

"A very small quantity of the sneeze weed suffices to cause death in an animal. Its effects on the human economy appear to be equally deleterious. A few years ago a neighbor of mine had some flour prepared from wheat that had been threshed in a lot in which the sneeze weed grew. A biscuit made from this flour and eaten without butter, produced in a lady general nervous twitching. Two other members of the family partook of the biscuit, but ate freely of butter with it, and escaped any unpleasant symptoms. Four negroes eating of the same biscuit, without butter, were all poisoned. They presented the same phenomena of spasmodic action of the muscles, accompanied with more or less delirium and loss of consciousness. A small sack of the flour was sent by this gentleman to his sons in the army, before its poisonous character had appeared, and all who ate of it were affected in a similar manner."

Dr. Lewis writes: "In 1866 a squad of Federal cavalry was sta-

tioned at Goodman, Miss. Many of their horses died from eating sneeze weed; some recovered by the use of oil." He moreover says that the soldiers firmly believed that a fatal case occurred in a patient to whom a strong decoction of the weed had been administered by the surgeon in charge. Little, or, at least, limited, reliance can be placed on the authenticity of this case, as it was only the opinion of the soldier in attendance. Dr. Lewis, however, fully confirms the fact of powerful effects of this plant, and believes that its active principle may be isolated and prove valuable in a variety of nervous diseases, when properly investigated.

4. *Helenium puberulum*, D. C.—California and Sonora.
5. *Helenium quadridentatum*, Labill.—Louisiana, Mississippi and Arkansas.
6. *Helenium microcephalum*, D. C.—Eastern and Western States and Texas.
7. *Helenium Mexicanum*, H. B. K.—California.
8. *Helenium Bigelovii*, A. Gray.—California; a very distinct and marked species, the handsomest and most ornamental of the genus.
9. *Helenium Hoopesii*, A. Gray.—Colorado, California and Nevada.

Nothing is known respecting the properties of the six last species, but from what is known of numbers 1 and 3, it may be safely inferred that some of them, at least, possess active medicinal principles, and are worthy of a better analysis than has been accorded to those already known.—*Detroit Rev. of Med. and Pharm.*, May, 1872.

SUBSTITUTION OF CARBOLIC OR PHENIC ACID FOR CRESOTE.

Communicated by Mr. T. N. R. MORSON.

The value of the wood creasote of Reichenbach as a remedial agent, and its employment in the preservation of articles used as food, has been fully proved during the forty years we have been manufacturers of this article.

Of late years its reputation has suffered from the substitution of carbolic or phenic acid for true creasote; and as no good test to distinguish these bodies has been published (and those of our Pharmacopoeia are for this purpose useless), we shall feel obliged by your publishing a very simple means for distinguishing these two bodies, which my son, Mr. Thos. Morson, has discovered in making some ex-

periments on adulterated samples submitted to us. The test is glycerin, in which true creasote is *insoluble, or nearly so.* Carbolic or phenic acid, on the contrary, *dissolves in all proportions*, and any large amount of this latter substance, if mixed with true creasote, will render the creasote soluble.

The danger of substituting carbolic or phenic acid for creasote to be used internally for food is well known.

To test a suspected sample, mix it with an equal quantity of pure glycerin. If they unite and make a clear solution, the substance is carbolic acid, or in greater part consists of it.—*Pharm. Journ., Lond., May 18, 1872.*

HOW TO DETECT ADULTERATION OF OILS.

The following instructions for the detection of adulterated linseed and refined rape oils, drawn up by Messrs. Blundell, Spence & Co., may prove very useful to many of our readers who wish to possess either article perfectly genuine:—

“ Rosin oil is exceedingly heavy, having a sp. gr. of 0.989 (the gravity of pure linseed oil is about 0.935). Fischer's oil balance is a convenient instrument for comparing the density of oils. The following table shows the results of a few experiments:—

	Fischer's oil balance.	Gay-Lussac's alcoholometer.	Sp. gr.
Pure linseed oil,	29° to 30°	50°	0.935
Linseed oil containing 5 p. c. rosin oil,	27° to 28°	49°	0.939
“ “ 10 “ “	25° to 26°	47½°	0.943
“ “ 20 “ “	23° to 24°	46°	0.947
Rosin oil,	—	6°	0.989

If the sample of oil is below 29°, the presence of rosin oil may fairly be suspected, and the following confirmatory tests should be applied:—Put about a quarter of an ounce of the suspected sample into an ounce vial, and add pure linseed oil till it is about three-quarters full. If the sample under examination contains rosin oil, the pure linseed last added floats on the top, the line of contact being plainly visible. If the finger be now placed on the mouth of the bottle, and the latter inverted two or three times, and held up to the light, bright wavy streaks will be observed, caused by the slow mixing of the two oils. Even five per cent. of rosin oil may easily be detected in this way. Place a slab of clean glass on a piece of white paper, at one end put

from ten to twenty drops of a known sample of pure linseed oil, at the other an equal quantity of that suspected; to each add one drop of oil of vitriol. On the pure linseed oil a dark-brown spot slowly forms; if the suspected sample contains rosin oil, a dark reddish-brown spot quickly forms, retaining its red color for a long time, and a peculiar scum forms over it. Rosin oil may be detected in boiled linseed oil in a similar manner, and with the same certainty, the reactions being more rapid. A sample of genuine boiled oil must be used for the comparison. The rosin oil used in adulterating linseed oil is half the price of the latter; it is free from smell even when heated; it has a peculiar metallic taste, which is not masked by the linseed oil. It greatly retards the drying properties of linseed oil, causes it to remain 'tacky' for some time, and prevents it ever becoming hard."

To detect the Purified Mineral Oil used in the Adulteration of refined Rape (Colza) Oil.—The mineral oil is rather lighter than rape oil, having a specific gravity of 0.902 (the gravity of refined rape being about 0.914). When mixed with rape it may be detected by a slight but peculiar smell on gently heating, and by a slightly disagreeable taste. It imparts the opalescent appearance peculiar to all earth and mineral oils. Bright wavy streaks may also be seen when an adulterated sample is mixed with a pure sample, as described above, but in this instance the pure oil should be added first. Place a slab of clean glass on a piece of white paper, at one end put from ten to twenty drops of a known sample of refined rape, at the other an equal quantity of that suspected; to each add one drop of oil of vitriol. On the pure rape a pale yellow spot slowly forms, throwing out dirty orange streaks; on the adulterated sample a reddish-brown spot quickly forms. Mineral oil interferes greatly with the burning of refined rape, causing smoke and great deposit on the wick.

Detection of Mineral Oils in Fatty Animal or Vegetable Oils, and vice versa.—The distinction of coal oil from animal and vegetable oil is not very difficult, from the fact that mineral oils cannot be saponified, as the following experiment will show. Boil the oil with caustic soda liquor until it is saponified; the soap resulting from it is to be evaporated in a water bath, and the residue treated with ether or petroleum spirit. The soap will be insoluble, while the coal oil, if such was mixed with the oil to be tested, will be soluble in the ether or petroleum spirit. The latter is to be evaporated carefully in a gradu-

ated cylinder, and, as the coal oil boils at a much higher temperature than either ether or petroleum spirit, the former will remain in the glass cylinder, while all the ether or petroleum spirit will be evaporated. The best way for evaporating the ether or spirit will be to put the glass cylinder containing the same in a vessel with hot water.

—*American Chemist, May, 1872, from The Oil Trade Review.*

NOTES ON AMERICAN ASPHALTUM.

BY PROF. J. S. NEWBERRY.

All my observations on asphalts have resulted in the conviction, that without exception they are more or less perfectly solidified residual products of the spontaneous evaporation of petroleum. In many instances the process of the formation of asphalt may be witnessed as it takes place in nature, and in our oil stills we are constantly producing varieties of asphalt. These are, in some instances, undistinguishable from the natural ones, and in general differ from them only because our rapid artificial distillation at a high temperature differs from the similar, but far slower, distillation that takes place spontaneously at a low temperature.

Asphaltum occurs in America, as does petroleum, in an immense number of places—so many that I cannot enumerate even one-half of those known to me. I will, however, notice a few of the most interesting. The asphalt from these various localities exhibits great diversity of physical character, and some, of chemical composition. These differences are doubtless, in part, due to differences in the petroleums from which they have been derived. The greatest noticeable diversity is, however, probably due to difference of age, and is a record of the slow but constant changes which time affects in these, as in other organic compounds.

Among the most important of our asphaltic minerals are the Albertite and Grahamite; the first from New Brunswick, the second from West Virginia. Both these are found filling fissures, opened across their bedding, in strata of carboniferous age. The geology of the districts where these deposits occur, has been described by Professors Dawson and Lesley, and it is unnecessary now to repeat the details which they have given. Suffice it to say that the fissures filled by both the Albertite and Grahamite mark lines of disturbance, where the strata are more or less tilted and broken, and where oil springs

abound. There is little room for doubt that in each instance the fissures which contain the asphalt have afforded convenient reservoirs into which petroleum has flowed, and from which all the lighter parts have been removed by evaporation. A large number of similar deposits, though of less magnitude, are known to me, all presenting the same general features. Among these I may mention a nearly vertical bed in the mountains west of Denver, in Colorado. This is a fissure filled with an asphalt which I submitted to Prof. Henry Wurtz for examination, and which he has shown to be not essentially different from Grahamite. On the banks of the Arkansas, south from Denver City, a number of smaller fissures, cutting cretaceous rocks, are filled with a similar asphaltic mineral. In the great Devonian black shale of Ohio and Kentucky (Huron Shale), fissures cutting across the bedding of the formation filled with Albertite, occur near Avon Point, Lorain Co., Ohio, and Liberty, Casey Co., Kentucky. Petroleum flows from this formation nearly everywhere along its line of outcrop. The asphalt from all the localities I have cited is hard, bright and brittle, and seems to be the product of very long continued and complete spontaneous distillation and oxidation.

In southern California, western Canada, central Kentucky and Chicago, &c., asphaltum may be seen in the process of formation from petroleum. In Enniskillen, Canada, an abundant flow of dark and heavy oil has produced large accumulations of more or less perfectly formed asphalt at the surface. These are locally known as gum beds. They attracted the attention of Mr. Williams in 1860, when the distillation of oil from cannel coal, bituminous shales, etc., was expanding into an important industry, and he established an oil distillery there for the use of this material. On cutting through the crust of solidified asphalt, semi-fluid and finally fluid petroleum was met with, afterwards these oil springs yielded immense quantities of petroleum. In Butler Co., Kentucky, the central member of the lower carboniferous group, is saturated with petroleum. This flows out from the cut edges of the formation in the valley of Green river and its branches, forming sheets of mineral tar and ultimately asphaltum, which cover the exposed surfaces of the rock. The quantity of asphaltic material in this vicinity is large, and it may some time be utilized for road making in the same manner as the Syssel asphalt.

In southern California, the accumulations of asphalt on the coast of Santa Barbara, San Luis Obispo, &c., have attracted the notice of

all travellers who have visited that region. The asphalt is here plainly inspissated petroleum. It drips from the cliffs at many points, and forms a scum on the ocean off the coast. There it is evaporated and oxidized, then thrown upon the beach by the waves, where it accumulates in large masses, generally mingled with sand and other foreign matter. When pure, the asphalt of California resembles that from Trinidad, and is beginning to be used for the same purposes—roofing, paving, lining of cisterns, &c. The wants of the entire western coast can be easily supplied from this source. About Chicago, Illinois, the Niagara limestone is in some localities completely saturated with a thick petroleum, which on exposure is converted by evaporation into asphalt. There are no important asphaltic accumulations here, and it is perhaps a little doubtful whether the hydrocarbon which fills the limestone is not too oily to serve the same purposes as the bitumen in the limestone of Val de Travers. But I know of no asphaltic limestone which approaches nearer to the foreign variety now so largely used, and it is quite possible that with appropriate treatment others may be utilized in the same way.

The above list includes all the important deposits of asphaltum in our country of which anything definite is known. At various points in the far west, occur what are known as "tar springs," really oil springs, around which more or less asphaltum accumulates as the result of evaporation. In Texas, south from Shreveport, a pitch lake is spoken of, in which are said to occur large quantities of bitumen. But of this almost nothing is known.

In anticipation of a great demand for asphaltum for the uses to which it is so extensively applied in Europe, I have endeavored to ascertain the quality and quantity of all the asphaltic materials found in our country, and with the exception of the Albert mine, have visited all of the localities described in the above notes. The result of my observations has been the conviction, that aside from the Albertite and Grahamite, which from their peculiar character will but partially supply our want of asphaltic material, we must look to Trinidad as a source from which we are to obtain the greater part of our asphalt. The quantity existing there is inexhaustible. The quality is such that it will with proper treatment do all that asphalt will anywhere do, and it is so accessible and transportation to our seaports so inexpensive, that it should be furnished from this source to our Atlantic cities, at a much less price than asphalt brought from any point in the interior must cost.—*American Chemist, May, 1872.*

ON A PROPOSED METHOD OF ESTIMATING ETHYLIC ALCOHOL WHEN PRESENT IN METHYLIC ALCOHOL.

By M. CAREY LEA, Philadelphia.

While engaged in the study of some methyl compounds, I met with a method, which has been recently published in England, for effecting the above object with approximate correctness. As any simple means of accomplishing this result would be useful, I have made an examination of the proposed method, which is as follows:

Methylic oxalate is first to be prepared from the specimen of methylic alcohol to be examined, by distilling it with sulphuric and oxalic acids. After separating the methylic oxalate from the distillate, its melting point is to be determined, and this melting point is affirmed to fix approximately the quantity of ethylic alcohol present, the melting point being lower in proportion to the ethylic alcohol contained in the methylic.*

This was tested as follows:

1. Some good wood-spirit, which I had distilled over caustic soda, was heated with oxalic and sulphuric acids, and the crystals of methylic oxalate separated from the distillate. It was not stated whether the melting point of the crystals was to be taken while they were still wet, or after drying. Apparently the first was intended; I tried, however, in both ways.
2. The adhering liquid was squeezed out as completely as possible with a spatula, the mass was liquified by heat, and a thermometric bulb placed in it.

Crystals first appeared at 102° F.

The liquid became thick with crystals at 100° F.

3. The crystals were next taken out and dried on blotting paper; as soon as dry were tried again. Result:

Crystals first appeared at 128° F.

The liquid became thick with crystals at 127° F.

4. Nine volumes of the same wood-spirit were next mixed with one volume of 95 per cent. (by vol.) alcohol, and the experiment repeated.

* A table has been given to show the relation:

Per cent. of ethylic alcohol,	0	Methylic oxalate solidifies at or about	104° F.
" "	5	"	" 95°
" "	10	"	" 86°
" "	15	"	" 76°

5. The crystals of methylic oxalate were freed from adhering liquid as far as could be done by pressure, the mass was liquified, and as it cooled,
 Crystals first appeared at 98° F.
 The liquid became thick with crystals at 97° F.
6. These crystals were dried as before, and then fused and cooled.
 Crystals began to form at 128° F.
 " became thick at 127° F.

It thus appears that the melting point of the crystals, if they have been dried on blotting paper, is precisely the same whether prepared from methylic alcohol nearly pure, or containing about ten per cent. of ethylic alcohol. So that no inferences can be drawn from this.

When the crystals have been simply squeezed, the congealing point appears to be lower when ethylic alcohol has been present, and when, consequently, the liquid which moistens the crystals contains ethylic oxalate. But it seems evident that the congealing point will depend quite as much upon the purity of the wood-spirit, so that two operators working with the same materials would be apt to get quite different results.

Accordingly, the congealing point attained at (5) compared with the table would indicate the presence of 3-4 per cent. of ethylic alcohol, whereas there was present about ten per cent. This conclusion is to be regretted, as the method, if reliable, would have been valuable.—*Amer. Journ. Sci. and Arts, May, 1872.*

OLEATES OF MERCURY AND MORPHIA.

In a Clinical Lecture recently delivered by Professor John Marshall, F.R.S., in the University College Hospital,* he drew attention to the fact that mercurial ointment, which is itself the basis of other mercurial preparations, is merely a mechanical mixture of minute globules of mercury; and said that he had long thought that if a solution of mercury in some oleaginous or unctuous medium could be employed, more immediate and satisfactory results would be obtained from the well-known therapeutical powers of this ancient remedy. In seeking for his object he first dissolved some of the perchloride of mercury in a small quantity of ether, and added to it about four times

* Reported in the "Lancet," May 25th, 1872.

the amount of oleic acid; but found that this combination freely used on the skin produced much irritation, unless it was employed in too dilute a form to be of service as an absorbent. In Gmelin's Chemistry there is a short account of certain metallic oleates formed by double decomposition; but with this as a guide, he failed to obtain any satisfactory oleate of mercury. Mr. Frank Clowes, to whom he then referred the chemical question, soon discovered that, although the ordinary sublimed scales of red oxide of mercury were with difficulty dissolved in oleic acid, the oxide, precipitated by caustic potash or soda from a solution of the metal in nitric acid (which is a yellow impalpable powder) is, when recently made and well dried, readily soluble in oleic acid, especially when aided by a temperature of about 300° F. At Professor Marshall's request Messrs. Hopkin and Williams have since studied the subject pharmaceutically, and have succeeded in preparing oleate of mercury, and certain solutions of that salt in oleic acid. The strength of the preparations made by them is indicated by the percentage of the oxide of mercury which they contain. The 5 per cent. solution is a perfectly clear pale yellow liquid, resembling olive oil, but thinner; the 10 per cent. solution is also fluid and perfectly clear, but as dark as linseed oil; whilst the 20 per cent. preparation is an opaque yellowish unctuous substance, closely resembling in appearance resin ointment, melting very readily at the temperature of the body, and forming a kind of transparent, viscid, colorless varnish when applied to the skin. The chief care to be observed in the manufacture of these solutions is not to hurry the process, and not to employ a high temperature, or the mercury will be immediately reduced.

Unlike the mercurial ointment so long in vogue, which is a crude, gross, unscientific mixture, very dirty and very wasteful, because so small a proportion of its mechanically admixed mercury is but slowly absorbed, these solutions of oleate of mercury are cleanly and economical in use; and as the diffusibility or penetrating power of oleic acid is much greater than that of ordinary oils or fats, and as each one-thousandth part of even a minim of these new preparations contains its proper modicum of mercury, they are absorbed by the skin with remarkable facility and manifest their remedial effects with great promptitude. They should not be rubbed in like ordinary liniments or embrocations, but should be *merely applied with a brush, or be spread lightly over the part with one finger*; otherwise they may cause

cutaneous irritation, or even produce a few pustules on the skin, especially in certain persons. This result may, however, be obviated by the addition of a small quantity of olive oil, or purified lard, according as an oleaginous or an unctuous preparation is required. Any of these forms may be scented by the addition of essential oils.

In employing these mercurial solutions for combating persistent inflammation of joints, Professor Marshall soon found that the addition of morphia was of very great advantage. For this purpose the simple alkaloid must be used, as neither the hydrochlorate, the acetate nor the meconate is soluble in oleic acid. For every drachm of the solution of oleate of mercury in oleic acid one grain of morphia may be added. Being, as well as the mercury, completely dissolved, it quite as rapidly penetrates the skin, comes quickly into contact with the extremities of the nerves, and thus, even within a few minutes, acts upon them at their most sensitive points, and speedily produces a soothing effect.

The oleates of mercury and morphia, thus united in one preparation, represent, as it were, a liniment, ointment, or plaster of mercury and opium; but they are far more elegant, economical and efficacious.

—*Pharm. Journ., Lond., June 1, 1872.*

THE CHILI SALTPEETER DEPOSITS OF PERU.

In travelling eastward through Peru, from the sea to the Cordilleras, on the 20th parallel of south latitude, seven zones are crossed, the third of which, the Pampa of Tamarugal, and the fifth, Serrania Alta, or the inner chain (Upper Peru, or Bolivia), are explored for saltpeeter. The treeless Pampa, a plain somewhat depressed in the center, has a very scanty vegetation, and the only thing which grows there is a single variety of lucerne grass (*medicago*); the cultivation of even this is attended with difficulty, on account of the large proportion of common salt, borax and saltpeeter in the soil. It serves in part for the support of the beasts of burden used for transporting to the coast the salts and metallic minerals found here. In the south of the Pampa is a large deposit of borax, pieces of which weigh on an average from 100 to 200 grammes; soda saltpeeter is found on the borders of Pampa and Serrania, but too far distant from the sea. On the western slope of the Cordilleras, salt is only found in small quantities; but in Upper Peru, where frequent rains wash it together into

great lakes, there are large quantities of it. The saltpeter mines consist of different strata. The surface of the ground is composed of silicates, sandstone and pieces of lime. At a depth of from 8 to 16 inches, very regular prisms are usually found, which sparkle with a mass of very small microscopic crystals; the strata below this, which is of rocky hardness, consists principally of common salt, with a little chloride of potassium and soda saltpeter, mixed with earth and pieces of silicates and carbonates, and has a thickness of 20 to 25 inches. Beneath this crust is the pure soda saltpeter, in more or less perfect crystals, from 20 to 40 inches long, and 3 to 7 feet in diameter. Guano is seldom found there, and only in small quantities; and it always occurs just below a stratum of salt. It is not in a powder, like that from the Chincha Islands, but adheres together, and is of a brown color, containing the bones and remains of birds and insects, and has an ammoniacal smell.

The chloride of sodium and lime present furnish mineral constituents required for the formation of the saltpeter. According to Thiercelin, the guano furnishes the nitrogen; but since the guano is always found below the salt crust, Koenig is compelled to refer the nitrogen to some other nitrogenous organic bodies, from whose decomposition ammonia is formed, and this in turn is converted by the action of the air and organic bases into nitric acid. Besides the three substances named, all the conditions favorable to the formation of saltpeter are found in that neighborhood, namely, a pure, dry atmosphere, absence of rain to wash away the saltpeter when formed, and the regular night fogs. The latter, leaving the salt undissolved, dissolve the saltpeter and filter it through this stratum, under which it crystallizes.

The search for saltpeter is conducted thus: The workman recognizes its presence by certain undulatory elevations of the ground, and numerous lumps of lime and disintegrated sandstone. He bores a hole some 12 to 18 inches in diameter, going down till the mineral is plainly visible. When the lowest layer is reached, the hole is widened to about three feet, filled with charcoal and sulphur and fired. The explosion breaks and tears up the ground for twice that distance around, and then properly begins the bringing up of saltpeter. The crude article varies considerably in compactness, color and quality, and is named accordingly. The so-called sulphuret, which owes its name to its mode of manufacture, is the purest. The porous, earthy and the congealed are different in quality. If the raw product con-

tails less than 50 per cent., the mine is abandoned as not worth working; a yield of 70 to 80 per cent. is exceptionally good. The raw material is transported on pack animals or wagons to the factory, where it is refined in two different ways. One method is to break it up in pieces and put it in an iron kettle half full of water, which is then heated over fire for an hour, the insoluble matter removed and a fresh quantity of raw material added until the solution is saturated. The clear solution is run off into crystallizing vessels, the crystals collected when formed and allowed to dry in the sacks in which it is shipped. In the second method, steam heat is employed; the crude material is put in perforated iron baskets and suspended in boiling water, and the process repeated until the liquor is saturated. The salpeter prepared in this way contains less than one per cent. of common salt, while that obtained by the former method contains upward of two per cent. Large quantities of iodine are annually reclaimed from the mother liquors of the saltpeter works of South America.—*Scientific American*, April 27, 1872.

Varieties.

A Delicate Test for Phenol.—Landolt, wishing to detect the presence of phenol (carbolic acid) in a well-water from the vicinity of a gas-works, and finding that the ferric chloride test is only of moderate delicacy, and is interfered with even by normal salts, as sodium sulphate, made use of bromine-water. When used in excess, this reagent gives, even with a solution of phenol in 43,700 parts of water, an immediate bulky precipitate of tribromophenol. The odor of phenol cannot be recognized when the solution contains less than 1 of phenol to 2800 of water; and the color developed by ferric chloride appears only when there is more than 1 of phenol to 2100 of water. By this test, the presence of phenol may be shown in 500 c.c. of urine. It may also be used quantitatively,—*Amer. Jour. Science and Arts*, May, 1872, from *Ber. Berl. chem. Ges.*, iv, 770, Oct., 1871.

A New Test for Arsenic.—Bettendorff* has simplified Hager's method of testing for this substance, and, it would seem, has rendered it peculiarly suitable for testing pharmaceutical preparations for slight impurities from this element.

The method of testing commercial sulphuric acid for traces of arsenic will give a fair illustration of the author's process.

A small quantity of protochloride of tin, in a shallow dish, is covered with pure hydrochloric acid (1·12 sp. gr.) until it is dissolved. To this is added,

* *Dingler's Journal*, ccii, 385.

drop by drop, the sulphuric acid to be tested, the vessel being agitated at each addition. This addition will cause considerable heating, and if no arsenic is present the liquid will remain clear. If the arsenic is present in the smallest quantities the liquid will be colored first yellow, then brown, and finally a dark greyish-brown, becoming at the same time turbid.

The process, while far more readily carried out than Marsh's, is declared to be nearly equal to it in delicacy.—*Journal Franklin Institute*, June, 1872.

A New Use for the Aniline Colors.—Mr. F. Springmühl recommends the use of alcoholic solutions of various gums (shellac, sandarach, &c.), to which various aniline colors have been added, in coloring all kinds of paper, linen, &c.*

The gum solution, which should be thin, penetrates entirely through the paper and gives to it an even tone. The operation is simply to place the coloring liquid in a shallow dish, and to draw the substance to be colored through it, which is subsequently hung up to dry; when dry another color can readily be produced upon one of the sides. Sandarach is said to produce matt; shellac and most other gums, a lustrous color. By adding to the lac solutions a small quantity of some ethereal oil, the substance may at the same time be perfumed. By judiciously mixing several of the lacs, any desirable tint can be produced.—*Journal Franklin Institute*, June, 1872.

Hydrofluoric Acid.—Mr. A. P. S. Stuart remarks that every one who has prepared hydrofluoric acid knows that sulphuric acid and fluor spar form an exceedingly hard, rock-like compound, and that it is very difficult to remove this from a platinum retort. The inconvenience may be avoided by mixing with the fluor spar about an equal weight of gypsum and the proper quantity of sulphuric acid. After the hydrofluoric acid has been expelled by heat, the mass in the retort is found to be of a pasty nature, and is easily removed by water.—*Scientific American*, June 22, 1872.

Action of Sulphuric Ether on Iodides.—E. Ferrière.—When to a solution of any iodide in water there is first added some starch solution, and this mixture shaken up with sulphuric ether, the following phenomena are observed: If the solution of the iodide is somewhat concentrated, a portion of iodine is set free, and the starch is colored blue; if the solution is weak, this coloration only sets in after some three hours; if the solution is very dilute, the blue coloration only appears after some two or three days. When the blue-colored starch is separated by filtration, and there is added to the filtrate another dose of ether, the blue coloration again appears, all the iodine being at last driven from its combination; chlorides and bromides are not thus acted upon. The author attributes this decomposition to the slow but continuous formation of an unstable iodhydric ether ($C_4 H_5 I$), but the experimental proof of that reaction has not been found by him.—*Chem. News*. May 31, 1872.

Apomorphine—A New Remedy.—It appears that the *Materia Medica* is about to be enriched by an important remedy—apomorphine, an emetic appa-

* *Zeitschr. f. Farberei*, 1871, No 41.

rently superior to all which have been used before. Two published investigations about the physiological effects of this remedy are before us: one by V. Siebert, of Dorpat ("Investigations on the Physiological Effect of Apomorphine"—*Archiv fuer Heilkunde*, xii, 6), and another one by Riegel and Boehm ("On the Emetic Effect of Apomorphine,"—*Deutsches Archiv fuer Klinische Medicin*, ix, 2).

After it had already been prepared, in 1845, by Arppe and other chemists, Matthiesen and Wright, in England, have lately again, by treating morphine with hydrochloric acid, produced it as a hydrochloric salt, the base of which (apomorphine) has simply originated out of morphine by the escape of water, to-wit: $C_{17}H_{19}NO_3$ (morphine)— $H_2O = C_{17}H_{17}NO_2$ (apomorphine). The same chemists have given notice of its emetic effect.

Numerous experiments on animals and human beings have taught that apomorphine is a reliable and speedy emetic (acting within from four to sixteen minutes, according to Riegel and Boehm), which has no very disagreeable concomitant effects of any kind, but the great advantage of being well suited for subcutaneous injections—a quality not belonging to any other known emetic, and one of great importance in the treatment of children, lunatics, unconscious patients and other cases. Slight vertigo, heaviness of the head, inclination to yawn, and praecordial uneasiness of very short duration, are the only symptoms which so far have been observed to occur when administered, but they disappear as soon as emesis sets in. After-effects on the intestinal canal, like those of tartar emetic, or inflammation and suppuration at the point of injection, have never been observed. Its physiological effects on the pulse, temperature of the skin, etc., are of no practical importance. The quantity necessary for this effect by hypodermic injection is, in the human being, according to Siebert, 0.006 to 0.007 (about 1-10 grs.), and oscillates, according to Riegel and Boehm, between 0.03 and 0.04 (about $\frac{1}{2}$ to $\frac{3}{4}$ of a grain). The latter used a solution containing one per cent. for their preparations.

This preparation has principally been obtained from England (under the name of hydrochlorate of amorphia, from McFarlan & Co., Royal Medical Warehouse, 17 North Bridge, Edinburgh), as a pale, greenish-gray powder.—*Atlanta Med. and Surg. Journ.*, May, 1872, from *Berliner Wochenschrift*, Jan., 1872, No. 5.

Spilanthes Oleracea.—At a recent meeting of the Agri-Horticultural Society of Madras, a reference was made to the medicinal properties of *Spilanthes oleracea*, especially as to its use as a remedy for toothache.

Colonel Pears, who communicated the fact, says that it was administered on the recommendation of a native servant to a friend of his who was suffering from very severe toothache, and that it effected a perfect cure in a very short time. Dr. Hunter pointed out that the *Spilanthes* contains some acrid principle, and, when chewed, causes a copious flow of saliva. The use of such articles for the relief of toothache is of very ancient date in European medicine, the pellitory of Spain having long been used as a masticatory in cases of toothache. The *Spilanthes* is probably just as effective as the pellitory, and is, moreover, easily obtained in India.

The plant, which belongs to the *Compositæ*, is an erect, branching annual, growing about twelve or fourteen inches high, and having small yellow flower-heads at the ends of the branches. It is well known for the peculiarly pungent taste of its leaves, on which account it is frequently cultivated in some tropical countries for use as a salad and potherb. It is known as Pará grass; in Japan it is called Ho Ko So.—*Med. and Surg. Reporter*, June 1, 1872.

Xylol.—Richard Moffett, M.D.—This is a new remedy,* recently discovered by a German chemist, and is used at the Royal Hospital in Berlin, in the treatment of small-pox. It is found in wood-tar and coal-gas naphtha. My first experience in the use of the remedy was in the following case. I was called to Mrs. Sophia H., a German woman, aged forty-two years, on March 27. She was suffering with preliminary symptoms of small-pox, which in a few days developed into the confluent form. My usual treatment failed to give any relief whatever, and she was fast sinking. On April 8 her pulse was 155, respiration 40, tongue brown, dry, and hard; the ends of her fingers and nails were purple, and her face was entirely covered with black scabs. The tonsils and parotid glands became so much affected that it was with the greatest difficulty that anything could be swallowed. She suffered from great restlessness, and was unable to obtain sleep even after taking large doses of chloral and morphia. Having obtained some of the new remedy,—xylol,—I determined to try it in her case. I gave her the following prescription:

R. Olei Xylol,	gtt. cc;
Pulv. Acaciæ,	q. s.
Syrupi Simplic.	
Aqua, aa,	f $\frac{3}{4}$ j.
S.—A teaspoonful every two hours.	

I called the next day, and found her sitting up in bed. All the graver symptoms had disappeared. Her tongue was quite moist, pulse 98, respiration 22. She told me the medicine relieved her at once; and her husband said that after taking three doses she went to sleep, and slept for four hours.

April 14.—The patient is quite talkative, and can swallow without difficulty. From this time forward her convalescence was uninterrupted. At this date, April 19, she is able to go about the house, suffering only from a partial loss of the right eye. She was vaccinated when an infant, but bore no mark. I have tried this remedy in a number of cases since, and its use has always been attended with the most happy results.—*Philad. Med. Times*, June 15, 1872.

Cimicifuga Racemosa as a Preventive of Small-Pox.—Dr. G. D. Norris, at a recent meeting of the Alabama State Medical Association, “stated that during the prevalence of small-pox in Huntsville, certain families, at the instance of some one unknown, had resorted to the free use of the tea of the *Cimicifuga racemosa*, or black snakeroot of the United States Pharmacopœia (*cohosh*), as

*See Amer. Journal of Pharmacy, 1872, April, 172.

a preventive of small-pox. In the families using the *Cimicifuga*, there occurred no case of the small-pox, though some were exposed to the disease. In the same families, Dr. Norris vaccinated the members, but without effect so long as they continued the use of the cohosh; after ceasing to use the tea as a prophylactic, he again vaccinated them, when the specific effects of the vaccine virus were produced. He submitted the results in these cases as new, and not without interest to the profession."—*Med. News and Library*, June, 1872, from *Atlanta Med. and Surg. Journ.*, April, 1872.

Old Rubber.—A fortune awaits the happy inventor who shall teach manufacturers to restore old rubber to the condition in which it was before vulcanization, for, with that secret there would be practically *no consumption* of this invaluable article. The thing has been done, and successfully, and we have ourselves, says the "Commercial Bulletin," seen pieces of vulcanized rubber possessing great strength and elasticity which were made entirely from old car springs; but it has never been accomplished on a large scale, and awaits the enterprise and ingenuity of some new Goodyear to develope it.

Meantime, old rubber has its uses. By a system of steaming and passing between rollers, it is reduced to a semi-plastic state, and in this condition is used in combination with a coarse fabric for heel stiffening, a purpose for which it is admirably adapted, its waterproof qualities being of especial value. There is, in a neighboring city, a factory devoted entirely to this branch of manufacture, where several hundred tons of old rubber of all kinds are consumed annually.

Old rubber is also largely used to mix with new raw material in the manufacture of all kinds of rubber goods. It serves to give bulk and weight, and if it does not increase, it certainly does not lessen, the strength of the fabric. It may also be mentioned that powdered soapstone, white lead, *terra alba*, and other heavy substances enter largely into the composition of almost all rubber goods, the use of which becomes apparent when it is remembered that they are generally sold by weight.—*Scientific American*, May 25, 1872.

The Use of Glycerin as a Solvent in Hypodermic Injections.—Dr. M. Rosenthal calls attention, in the "Wiener Medizinische Presse" for January 7, 1872, to the power which glycerin possesses to dissolve various of the substances which are ordinarily used in hypodermic medication. Its solvent powers are greater than those of water, and are very much increased by heat. Thus, a fluidrachm of glycerin, when heated, will readily dissolve twenty grains of the sulphate of quinia, from ten to twelve grains of the acetate or muriate of morphia, and ten grains of the extract of opium. Morphia may be added to a solution of quinia in glycerin without causing a precipitate. It will also dissolve from half a drachm to one drachm of the iodide or bromide of potassium, and four grains of corrosive sublimate. These substances are not precipitated as the liquid cools; on the contrary, the solution will remain clear and fit for use during at least a year.—*Boston Med. and Surg. Journ.*, June 6, 1872, from *Med. Times*.

Cure of Hydrophobia.—Dr. Alford, at Flint, Mich., has cured a case of hydrophobia. The disease did not make its appearance until eight months after the patient was bitten. The treatment was this: Sulphate of morphia, one grain, was injected subcutaneously every four hours, and half a drachm of powdered castor given internally, in syrup, at the same time. Chloroform was also inhaled in small quantities. In about half an hour, sleep occurred, and continued over an hour. Convulsions then recurred, and continued, with intervals of variation, for about twelve hours, when they entirely ceased. Vomiting and great prostration followed, but the patient ultimately recovered. The excessive prostration was counteracted by wrapping the patient in a woollen blanket moistened with a warm solution of muriate of ammonia, twenty grains to the ounce.

Dr. Alford states that he had another successful case of cure of hydrophobia eight years ago.—*Scientific American*, May 25, 1872.

Coffee Roasting.—There is a considerable difference in the method of roasting the coffee berry in this country and on the Continent. In France, for instance, not only is the machinery used constructed with some amount of care for the purpose of securing the object desired—namely, the equal torrifying of the berries, but the persons employed in the operation have to possess a certain amount of technical skill, and a knowledge of the chemistry of the work they do. In France a roaster has to acquire a knowledge of the various coffee berries, for each different sort requires to be roasted a longer or shorter period than the other; and when it is remembered that, on the authority of those who have studied the subject, a few seconds only will make all the difference in the quality of the coffee, it will seem that this knowledge is important. Roasters have to serve some years before they are declared thoroughly competent, and the operation of roasting is always under the superintendence, if not of the actual care, of a tried and experienced man. The machinery in use is generally as follows: A hollow iron ball, turning on its axis, receives the unroasted berries. In it is a valve by which the escape of the gas, arising during the process, is regulated. This ball is turned over a fire and made to revolve somewhat rapidly. Its shape secures the equal contact of every berry with the hot metal. As soon as the berries are sufficiently roasted, the gas is let off, for if it were allowed to remain, the berries would absorb it, and the flavor be vitiated. The revolving motion is then continued until they are turned into the receptacle prepared to receive them. They are then kept in hermetically-closed tins until they are ready for use. In this country the process is much more a rule of thumb affair, and, with rare exceptions, all coffees are roasted alike, in cylinders, which are not capable of roasting so equally as a ball, and but little attention is paid to the chemical effects of the roasting. Another bad feature [prevails in England, and that is, the berries are ground by the wholesale dealers, and by the time the decoction reaches the breakfast table the best flavor of the coffee has been floated away in the air. In order to facilitate adulteration, coffee is usually ground very fine, which is another mistake.—*Good Health*, March, 1872, from *English Mechanic*.

Bread made with Sea-Water.—M. Rabuteau, after considering the effects of sea-water in large or small doses on the economy, thinks that bread made with it might be taken with advantage in dyspepsia, phthisis, and scrofula. The bread is extremely pleasant to the taste.—*Detroit Rev. of Med. and Pharm.*, May, 1872.

A Fact for Non-Smokers.—A Dutch merchant, named Klaës, who was known among his acquaintances by the name of the King of Smokers, has just died near Rotterdam. According to the Belgian papers he had amassed a large fortune, and had erected near Rotterdam a mansion, one portion of which was devoted to the arrangement of a collection of pipes according to their nationality and chronological order. A few days before his death he summoned his lawyer, and made his will, in which he directed that all the smokers of the country should be invited to his funeral, that each should be presented with 10lb. of tobacco and two Dutch pipes of the newest fashion, on which should be engraved the name, arms, and date of the decease of the testator. He requested all his relatives, friends and funeral guests to be careful to keep their pipes alight during the funeral ceremonies, after which they should empty the ashes from their pipes on the coffin. The poor of the neighborhood who attended to his last wishes were to receive annually, on the anniversary of his death, 10lb. of tobacco and a small cask of good beer. He desired that his oak coffin should be lined with the cedar of his old Havanna cigar boxes, and that a box of French caporal and a packet of old Dutch tobacco should be placed at the foot of his coffin. His favorite pipe was to be placed by his side, along with a box of matches, a flint and steel, and some tinder, as he said there was no knowing what might happen. A clever calculator has made out that Mr. Klaës had, during his eighty years of life, smoked more than four tons of tobacco, and had drunk about 500,000 quarts of beer.

It is said, "exceptions prove the rule." This is decidedly a very strong exception, and will doubtless be often adduced as forcible evidence against "the poisonous effects of tobacco upon the system."—*Med. Press and Cir.*, May 8, 1872.

Arabian Mode of Perfuming.—How the Arab ladies perfume themselves is thus described by Sir Samuel Baker in his work on the Nile: "In the floor of the hut or tent, as it may chance to be, a small hole is excavated sufficiently large to contain a champagne bottle. A fire of charcoal or simply glowing embers is made within the hole, into which the woman about to be scented throws a handful of drugs. She then takes off the clothes, or robe which forms her dress, and crouches over the fumes, while she arranges her robe to fall as a mantle from her neck to the ground like a tent. She now begins to perspire freely in the hot air bath, and the pores of the skin being open and moist, the volatile oil from the smoke of the burning perfumes is immediately absorbed. By the time the fire has expired, the scenting process is completed, and both her person and her robe are redolent with incense, with which they are so thoroughly impregnated that I have frequently smelt a party of women strongly at

full a hundred yards distance, when the wind has been blowing from their direction. The scent, which is supposed to be very attractive to gentlemen, is composed of ginger, cloves, cinnamon, frankincense, and myrrh, a species of sea weed brought from the Red Sea, and lastly the horny disc which covers the aperture when the shell fish withdraws itself within its shell. The proportions of these ingredients in this mixture are according to taste."—*Scientific American*, June 7, 1872.

AMERICAN PHARMACEUTICAL ASSOCIATION.

The Twentieth Annual Meeting of the "American Pharmaceutical Association" will be held, in the city of Cleveland, on the first Tuesday (3d) of September, 1872, commencing at 3 o'clock P.M.

It is confidently expected that the hopes expressed at the last meeting will be fully verified, and a large number of applications for membership presented to the Association at this meeting.

The Local Secretary, Henry C. Gaylord, of Cleveland, will receive the goods intended for exhibition during the session, and druggists as well as manufacturers of chemicals and articles connected with pharmacy and its collateral branches, are respectfully requested to send the goods to be exhibited free of charge and accompanied by an invoice and a full description of the articles.

ENNO SANDER, *President.*

St. Louis, June 24th, 1872.

Minutes of the Philadelphia College of Pharmacy.

A stated meeting of the Philadelphia College of Pharmacy was held at the College Hall, Jane 24th, 1872, Dillwyn Parrish, President, in the chair; 17 members present.

The minutes of the last meeting were read and approved. The minutes of the Board of Trustees were read by William C. Bakes, Secretary of the Board, and on motion were approved.

The following communication from the College of Physicians, referred by the Board of Trustees to the College, was read. After an interchange of views by the members on the *practical effects* of such cautionary provisions as are contemplated in the resolutions, the communication was, on motion, referred to a committee. To this service the Chair appointed Wm. Procter, Jr., Edward Parrish, Joseph P. Remington and William C. Bakes.

"Preamble and Resolutions passed by the College of Physicians of Philadelphia, May 1st, 1872.

"Whereas, cases of accidental poisoning and of the internal administration of medicines intended only for external use are so common; and, whereas, every possible safeguard should be employed to prevent such accidents, therefore

"Resolved, by the College of Physicians of Philadelphia, that it be recommended to all druggists to place all external remedies in bottles, not only colored so as to appeal to the eye, but also rough on one side, so that, by the sense of touch, no mistake shall be possible even in the dark.

"Resolved, that all bottles containing poisons should not only be labelled 'poison,' but also with another label, indicating the most efficient and convenient antidote.

"Resolved, that a copy of these resolutions be presented to the American Medical Association, to the College of Pharmacy of Philadelphia, and to the American Pharmaceutical Association, and that their assistance be asked in bringing about so desirable a reform. Signed,

"JOHN H. PACKARD, M.D.,
"Secretary of the College of Physicians of Philada."

The committee on deceased members read the following notice of their late honorary member, Prof. Samuel Jackson, M.D.

Prof. Samuel Jackson was born in Philadelphia, on the 22d of March, 1787. He early embarked in the drug business, in which, however, he was not successful; and the bent of his mind being toward scientific and professional pursuits, he became early connected with Associations for Medical Instruction, and in 1821 was elected Professor of *Materia Medica* in this College.

His lectures were fluent and suggestive; but in the department of *Materia Medica* there was less scope for his peculiar talents than in that of *Physiology*. In 1827 he resigned his Professorship in our College, though still devoting himself with success to medical education.

So high was his reputation that, in 1835, on the Chair of *Institutes of Medicine* being established in the University, he was elected its first incumbent. Here his reputation steadily increased, his clear and vigorous style, and the terseness and force of his language, drawing crowds of listeners to his lecture-room.

He published several works of value, of which his "*Principles of Medicine*," issued in 1832, was the most important. In 1856, he wrote an "*Introduction to the American Edition of Lehman's Chemical Physiology*." As a practitioner of medicine he was remarkable for the originality displayed in his prescriptions, in many of which the leading idea was an application of chemical principles to the treatment of diseased or enfeebled conditions. Dr. Jackson continued in active professional life until, a few years since, physical weakness and advancing years compelled his retirement. He died on the 4th of April, 1872, universally respected and honored by the medical profession, by pharmacists and the community at large.

The following communication was read, for information to the members of the College:

To the Philadelphia College of Pharmacy:

The Committee appointed at the last meeting of the Convention of the teaching Colleges of Pharmacy of the United States, held at St. Louis in September last, has agreed to recommend the following questions for discussion at the next meeting of the Convention, to be held in Cleveland, Ohio, in September next:

1. Analytical Chemistry. Is it essential for a thorough pharmaceutical education? If so, should it not be embraced in the curriculum of the Colleges

of Pharmacy, and how much time should at least be devoted to the lectures and to laboratory instruction?

2. Would it not be advisable that the questions at the examinations in writing for the degree of Graduate in Pharmacy be annually reported and, if deemed necessary, discussed by all the Colleges represented in the Convention of the teaching Colleges of Pharmacy, for the purpose of establishing, as nearly as may be possible, a uniform standard for graduation?

3. Pharmaceutical Degrees. In order to stimulate the acquirement of scientific attainments amongst graduates in pharmacy, is it not advisable to establish one or more higher degrees? If so, upon what basis ought such degrees to be conferred?

For the Committee,

JOHN M. MAISCH.

The following delegates were elected to represent the College at the next session of the American Pharmaceutical Convention, to assemble in Cleveland, Ohio, on the 3d of September next, viz.: Wm. Procter, Jr., Prof. John M. Maisch, Prof. Edward Parrish, Joseph P. Remington, Edwin McC. Boring.

On motion, the following Committee was appointed to confer with the Corresponding Secretary regarding the certificates of corresponding and honorary membership in this College, which there is reason to believe have miscarried, and with the Secretary to take such action on the subject as they may deem expedient, viz.: Wm. C. Bakes, John M. Maisch, Samuel S. Bunting.

On motion, then adjourned.

CHARLES BULLOCK, *Secretary.*

Pharmaceutical Colleges and Associations.

THE NEW YORK COLLEGE OF PHARMACY has elected the following five gentlemen to constitute the Board of Pharmacy, in accordance with the law signed by the Governor May 22d: Dr. Wm. Neergaard, Dr. W. Manlius Smith, Dr. F. Weissmann, Paul Balluff and Theobald Frohwein.

MARYLAND COLLEGE OF PHARMACY.—At the June meeting the Committee on Unofficial Formulas made a verbal report through its Chairman, Prof. J. F. Moore, and read the formulas as far as adopted. On motion of Dr. J. Brown Baxley, the Committee was vested with plenary power to adopt and print at the earliest possible day. Two copies will be issued: a formulary, for the use of pharmacists; and a descriptive, concise catalogue, to be presented to members of the medical profession.

Prof. Moore presented, in the name of Mr. Chas. R. Beck, a beautiful specimen of taraxacum, pressed, mounted and framed. Mr. J. F. Hancock, on behalf of Prof. Jno. M. Maisch, presented samples of Chinese blistering flies (*Mylabris Cichorii*), which proved a great attraction. On motion, the thanks of the College were tendered to both donors.

Mr. Wm. S. Thompson's paper on "Pharmacy," read at the last meeting, was then called up, and discussed by Prof. Moore, Dr. J. Brown Baxley, and others.

After a few hours pleasantly spent the meeting stood adjourned.

THE CALIFORNIA PHARMACEUTICAL SOCIETY has elected, on May 8th last, five pharmacists to serve for the next three years as the Board of Pharmacy, in compliance with an Act to Regulate the Practice of Pharmacy in the City and County of San Francisco, approved March 28, 1872. The Board has organized and consists of John Calvert, President; James G. Steele, Secretary; Wm. T. Wenzell, Wm. Simpson and J. W. Forbes. The registration commenced June 1st, at 521 Montgomery street, while the examinations are held at the rooms of the Pharmaceutical Society.

PHARMACEUTICAL SOCIETY OF ANTWERP.—The session held April 23d was mainly occupied by the report of Mr. F. Van Pelt on a memoir by Dr. Donato Tommasi, in which the author proposes to employ a solution of acetate of sodium as a solvent for iodide of lead; 5 c.c. of a concentrated solution of the former salt will dissolve in the cold 1 grm., and when hot 2 grm. of the iodide. This solubility may be taken advantage of in detecting insoluble adulterations in the iodide of lead. For external application the following formula is proposed:

R.	Concentrated Solution of Sodium Acetate,	15 c.c.
	Glycerin,	23 c.c.
	Iodide of Lead,	0·40 grm.
	Rose Water,	a few drops.

Mix.

THE GENERAL PHARMACEUTICAL ASSOCIATION OF BELGIUM met, April 28th, at the free University at Brussels, Mr. De Banque presiding, and Mr. Vanden Heuvel acting as Secretary. The transactions were mainly of local interest.

PHARMACEUTICAL SOCIETY OF PARIS.—At the meeting of May 1st, Mr. Lefort read a paper on belladonna, to demonstrate the practicability of preparing atropia from the leaves. (An abstract of the paper will be published in our next number.) In the following discussion attention was drawn to the dangerous results which may follow the administration of crystallized atropia, aconitina or digitalin, since they are much more powerful than the preparations heretofore employed in medicine. After hearing a report on the transactions of the Académie des Sciences, and on Dúquesnel's observations on the sulphate of eserina (physostigmia), the meeting adjourned.

Editorial Department.

THE TWENTIETH ANNUAL MEETING OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.—Elsewhere will be found the public announcement, by President Enno Sander, of the next meeting of this Association, which will be held in the city of Cleveland, Ohio, on the third of September next, at 3 o'clock P.M. The

pharmacists and druggists of that city have been at work for several months to give the Association a hearty reception, and to make this meeting as successful as the previous ones have been. The beautiful situation of Cleveland on the southern shore of lake Erie, and the splendid scenery, through which the visiting members will have to pass, in order to reach the place of meeting, will doubtless cause many to postpone their usual summer trips until that time, while, on the other hand, it is expected that the important matters which will be reported on and discussed, will render this meeting as interesting and profitable as the last.

In a short time the permanent Secretary will issue his usual notices to the members, in which the arrangements will be mentioned which he may be able to make with the different railroads.

The important feature of the exhibition connected with the meeting has likewise received proper attention, and members and others having objects of interest to the profession or the trade to exhibit, are requested to apply for space to the local Secretary, Mr. Henry C. Gaylord, at Cleveland, who will forward circulars on application, and take charge of the goods on arrival.

THE THIRD CONVENTION OF THE COLLEGES OF PHARMACY will be held at Cleveland during the period of the approaching meeting of the American Pharmaceutical Association. In 1870, at the Baltimore meeting, the first convention was held, which was merely preliminary in its character, although several important questions were discussed. An organization was effected at the second convention at St. Louis, in 1871, and a committee, consisting of Professors J. Faris Moore and J. M. Maisch, was appointed, to propose, with the approval of the President, Mr. E. H. Sargent, a number of questions for the consideration of the third convention. Three subjects have been agreed upon, and were communicated to all the teaching colleges of pharmacy in the United States for their information in advance of the meeting. These questions are printed on page 328 and 330 of our present number.

AN ACT TO PREVENT THE SALE OF DRUGS OR MEDICINES DESIGNED TO PROCURE CRIMINAL ABORTION has passed both Houses of the Legislature of Illinois, and was signed by the Governor. It prohibits the sale of abortifacient drugs or medicines except upon the written prescription of some well-known and respectable practising physician, the prescriptions to be registered in a book kept for that purpose only. Medicines designed for the use of females, together with the formulas by which they are prepared, must be submitted, under oath, to five physicians in the county in which the medicine is proposed to be sold; if the physicians certify, under oath, that the medicine is not abortifacient, the medicine may be sold, if the dealer keeps a copy of the certificate and of the formula for the inspection of any person desiring to see the same. The fine for every offence is from fifty to five hundred dollars, or imprisonment for one to six months, or both.

The law is evidently intended to reach those murderous concoctions sold as "female pills," "golden pills," "periodical mixtures," &c., and inviting to com-

mit the crime of abortion by statements of their harmlessness, coupled with the caution not to take them during pregnancy. If the law is properly enforced, it will doubtless save the lives of many an innocent unborn that would have been murdered by these vile preparations, which were never found in a respectable pharmacy.

COLLUSIONS BETWEEN PHYSICIANS AND APOTHECARIES are possible in all communities; but to the honor of both professions we believe that they are of comparatively rare occurrence, at least in their more vulgar grades, the lowest one of which we regard the practice of writing prescriptions in a manner that they can be understood only by those apothecaries with whom the little arrangement has been made. This is done sometimes in obscure and unintelligible characters; at other times by the employment of more or less barbarous terms, or by the agreement upon certain formulas which are prescribed by names, perhaps correct enough as far as the preparation is concerned, but giving no clue of all the constituents, their nature or proportion.

We refer to this species of fraud upon two honorable professions and the suffering public, in consequence of a communication, by Mr. Adolph Mueller, of Highland, Ill., having been handed to the Editor by the Executive Committee of the American Pharmaceutical Association, to whom it was referred by the Association at its last meeting in St. Louis, want of time preventing its consideration. Mr. Mueller sent copies of several prescriptions, one of which reads thus :

R. Ol. sol. acid. carb., 3ij.

and then asks the following questions :

1. Is it not obligatory on the practising physician to use in his prescriptions a scientific language, intelligent to any educated pharmacist?
2. Is it admissible that prescriptions are written in secret characters, so as to be understood by those only who are in possession of the corresponding key?
3. Does not such a practice endanger the lives of the patients, and would it not, if generally adopted, be detrimental to the public welfare?
4. Is not, therefore, such a practice to be regarded as "malpractice," unworthy the professional physician and pharmacist?
5. Is there no legal way to prohibit such a practice on the part of unscrupulous physicians and pharmacists?

We leave it to our readers to answer these questions. An honorable man will not stoop to such means to increase his profits; if found out, the offender will not be tolerated, we think, in the various medical and pharmaceutical societies—the codes of ethics of all containing provisions against such actions. We have very little faith in the influence of legal restrictions upon such artifices, believing that the tactics would be changed so as not to come into direct conflict with the law; we expect by far better results from raising the professional standard of both professions, and therefore look with confidence towards improvement also in this respect, as one of the results which is likely to follow the conscientious administration of the pharmaceutical laws enacted in various parts of the country.

POTASH IN CORN-COBS.—Under this title, the Boston Journal of Chemistry, for June, contains a short paper, which, except by the very careful reader, is readily taken as original, and apparently refers to an analysis of the ashes of corncobs raised at Lakeside farm. It is, however, merely an abstract of the essay of Mr. Herbert Hazard, published on page 152 of our April number, and although the last half is copied verbatim from it, no credit is given either to the author or to our Journal.

PETROLEUM-BENZINE.—In copying our paper on “The Use of Petroleum-benzine in Making Oleo-Resins,”* the Editor of the Pharmaceutical Journal and Transactions says in a foot note:

“The application of the term benzine to this volatile spirit is objectionable, inasmuch as it is liable to cause misunderstanding. It is the more volatile portion of petroleum or paraffin oil, and would be better designated petroleum or paraffin naphtha.”

As far as America is concerned, the adoption of this suggestion would be productive of confusion, since here the term petroleum naphtha is used to designate a still lighter and more volatile liquid than the one to which the name of benzine is applied; the former term (naphtha) is probably nearly identical with what in Germany is now called petroleum-ether. The adoption of scientific names for the various products of the distillation of petroleum, will be impossible as long as we are unable to obtain them in a state of purity, it being well known that all these liquids, as now met with, consist of mixtures of isomeric or polymeric hydrocarbons, differing in specific gravity and volatility. The adoption in the United States of the word benzine has been explained by the “Scientific American,” in a paper which was copied into the “Chemical News” for May 17th, and with the prefix petroleum—to indicate its difference from the true benzine or benzole—we believe it to be as good and definite a term as petroleum naphtha or petroleum ether; or rather all these terms are more or less indefinite, since they are not applied to definite mixtures in definite proportions of the hydrocarbons, but rather to mixtures of lighter and heavier ones, having a certain density.

A RELIABLE TEST FOR CREAMOTE, which is at the same time easy of application, has been a desideratum for many years. We publish in the present number Mr. Morson’s recently proposed test to distinguish creasote from carbolic acid by means of glycerin, in which the former is said to be insoluble, if pure. On examining a number of samples, one of which was known to be Merck’s, we found them all miscible with an equal bulk of glycerin to a transparent homogeneous liquid, and hence we are forced to conclude either that all these samples contain more or less carbolic acid, or that Mr. Morson’s test is based upon an erroneous observation, or that different creasotes differ in their behavior to glycerin. The latter view seems the most probable, since the difficulties encountered in isolating and separating the various constituents of creasote from each other are very considerable. Judging merely from the solvent powers of glycerin, we should have expected that it would dissolve a substance which, like creasote, is so readily soluble in alcohol and also soluble in water.

*American Journal of Pharmacy, May, 1872.

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We shall wait with interest for further experiments with creasote of undoubted origin.

In a communication to the *Pharm. Jour. and Trans.*, of June 15th, Professor Fluckiger states that nearly anhydrous glycerin dissolves both carbolic acid and creasote to a transparent liquid, which, on the addition of water, remains clear with the carbolic acid, but becomes turbid if it contains creasote. Mr. Morson's observation, therefore, probably refers to a diluted glycerin.

SYRUP OF PHOSPHATES OF IRON QUINIA AND STRYCHNIA.—A correspondent, who omitted to give his address, so that we could not communicate with him by letter, will find the original formula for this preparation in the "American Journal of Pharmacy," 1867, page 177, some remarks thereon on page 386 of the same volume, and a paper containing a modified formula on page 322 of the volume for 1868.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Constitution, By-Laws, Articles of Incorporation and Proceedings of the Third Annual Meeting of the California Pharmaceutical Society, held at San Francisco, October, 1872; also the Roll of Members. San Francisco: printed by Joseph Winterburn & Co. 1872. 8vo, 36 pages.

The pamphlet before us gives evidence that the pharmacists residing on the coast of the Pacific Ocean mean to take part in developing scientific pharmacy and to elevate our profession to that position which it ought to occupy. The legal incorporation of the Society; the part it has taken in order to secure the passage of the act regulating the practice of pharmacy in San Francisco; the minutes of the third annual meeting; the papers then read, although but two in number; and the increased number of names upon the roll of members of the Society, are so many indications of the energy and professional spirit displayed.

We are informed that, although the cod fisheries on the Pacific coast have been in successful operation for the past six or seven years, no single attempt of organized effort has been made towards developing the production of cod-liver oil.

Mr. Wenzell has succeeded in obtaining the alkaloids of ergot, discovered by him,* as a white flocculent precipitate from their alcoholic solution by means of anhydrous ether; the precipitate, however, is very deliquescent, and rapidly turns brown on exposure to air.

Mr. Calvert's paper is an able argument in favor of reducing the fluid extracts to one-half of their present pharmacopœia strength, a movement, however, for which we have no sympathy.

The pharmaceutical law appears to be a good one, based upon that proposed last winter for New York by the pharmacists of that city. It is certainly calculated, if properly enforced, to meet with the approbation of conscientious pharmacists and protect the interests of the public.

*See American Journal of Pharmacy, 1864, p. 193—202.

Geo. P. Rowell & Co.'s American Newspaper Directory. Containing accurate lists of all the newspapers and periodicals published in the United States and Territories, and the Dominion of Canada and British Colonies of North America; together with a Description of the Towns and Cities in which they are published. New York: Geo. P. Rowell & Co., Publishers and Newspaper Advertising Agents. 1872. Large 8vo, 680 pages.

A handsomely gotten up and well arranged volume, this directory will prove of particular value to all advertisers and others seeking information about the numerous periodicals published on this continent, the list of which appears to be pretty complete and reliable, although we miss a few, among them the "Chicago Pharmacist," and the "American Journal of Science and Arts," published at New Haven.

There are 6432 periodicals published in the United States, 87 in the Territories, 374 in the Dominion of Canada, and 29 in the other British North American Colonies. The largest number is published in New York (951), then follows Pennsylvania (614), Illinois (518), Ohio (439), Iowa (308), Missouri (300), Massachusetts (292), Indiana (290), Michigan (236), Wisconsin (208), &c.

The list of periodicals is arranged alphabetically, by states and towns, and gives, besides the names, the days of issue, general character, form, size, subscription price, date of establishment, editors and publishers' names, circulation, &c. This is followed by a list of towns and cities in which periodicals are published, giving the location, population, industry, &c., then by a list of periodicals inserting advertisements, publishing over 5000 copies; lists of papers devoted to religion, agriculture, medicine, education, amusement, secret societies, commerce and finance, insurance, real estate, science and mechanics, law, sporting, music, and woman's suffrage. The papers published wholly or in part in other than the English language conclude these lists, which occupy one-half of the volume, while the other half contains advertisements and the index in two parts.

Second Cincinnati Industrial Exposition, 1871. 8vo, pp. 285.

Cincinnati Industrial Exposition of Manufactures, Products and the Arts. Rules and Regulations and Premium List for the Third Exposition, 1872. Cincinnati: Robert Clarke & Co., Printers. 8vo, 56 pages.

The former of these handsome volumes, which contains the usual reports of articles entered for competition, on premiums awarded, &c., is embellished with a plan of the floor room of the last fair, a view of the building in which the exposition was held, a facsimile of the medals awarded, and a handsome steel engraving of the Davidson Fountain erected at Cincinnati last fall.

The contents of the other volume, to which plans of the space are added which will be available for the next exposition, is expressed in the title. With a commendable enterprise, the exhibiting space has been increased to seven acres, which has been divided into 16 grand departments, each of which is again subdivided.

The third exposition will be open from September 4th to October 5th. Any information desired in regard to it may be obtained on application to W. W. Taylor, Secretary of the Cincinnati Industrial Exposition.